

LOCKEFORD PLANT MATERIALS CENTER

ANNUAL TECHNICAL REPORT

2003

A Technical Summary of Plant Materials Studies
at the Lockeford Plant Materials Center
Lockeford, California

FOR MORE INFORMATION CONTACT:

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INTRODUCTION, HISTORY AND FACILITIES

The Lockeford Plant Materials Center (PMC) is a federally owned and operated facility under the administration of the California State Office of the USDA Natural Resources Conservation service. The Lockeford PMC produces plant materials in cooperation with California Resource Conservation Districts, University of California, Foundation Seed Service, Agriculture Cooperative Extension, and the California Crop Improvement Association.

The plant materials program began February 1935 with the Soil Conservation Service Plant Materials Nursery at Santa Paula, California. In 1939 a 60-acre Plant Materials Center was established at Pleasanton, California. In September 1972 the Pleasant PMC was moved to the current site at Lockeford California.

The California plant materials program and the Lockeford PMC provide plant science support to the USDA-NRCS California Field Offices. The California Plant Materials Center in Lockeford collects promising plants and tests their performance under a variety of soil, climatic and use conditions. Over the past fifty years, 31 plants have been released for commercial seed production to solve soil and water conservation problems.

The Lockeford plant materials center is 106.7 acres of prime farmland located along the Mokelumne River near Lockeford California. Irrigation water is available to all fields at the PMC. Initial and advance evaluation of new plant materials are conducted at this site. The PMC responsible for seed increase plantings of potentially valuable plant species and for the maintenance of seed stock of California cooperative releases. Field Evaluation Plantings (FEP's) are studies conducted away from the PMC at problem sites in cooperation with federal, state, municipal agencies, and private individuals.

PERSONNEL

STATE CONSERVATIONIST

Chuck Bell

Plant Resource Specialist

Vacant

NAT'L PLANT MATERIALS SPECIALIST

Richard White

PLANT MATERIALS CENTER STAFF

Position	Name	Start	End
PMC Manager	David Dyer	03/03/87	Present
Farm Supt.	Celm Avitia	04/12/76	Present
Gardener	Jim Hutson	02/01/88	Present

CALIFORNIA PLANT MATERIALS COMMITTEE

State Office

DIANE HOLCOMB - State Resource Conservationist

- State Biologist

JERRY REIOUX - State Forester

- State Range Ecologist
BOB FRY - State Agronomist
ALAN FORKEY - State Wetlands Biologist
CHARLES DAVIS - State Conservation Engineer
LORI METZ - Representing State Soil Scientist

Area I

JOHN WEATHERFORD - Soil Conservationist
ANN FRANCIS - Landscape Ecologist
DENNIS MOORE - Area I Resource Conservationist

Area II

SALLY NEGRONI - Soil Conservationist
PHIL BLAKE - District Conservationist

Area III

JOE WILLIAMS - Cluster Agronomist
DAVE DURHAM - Soil Conservationist

Area IV

RITA BICKEL - Area IV Resource Conservationist

PMC

DAVE DYER - PMC Manager

MAJOR LAND RESOURCE AREAS SERVED

4 - CA. Coastal Redwood Belt
5 - Siskiyou - Trinity
14 - Central CA. Coastal Valleys

- 15 - Central CA. Coast Range
- 16 - CA. Delta
- 17 - Sacramento and San Joaquin Valleys
- 18 - Sierra Nevada Foothills
- 19 - S. CA. Coastal Plain
- 20 - S. CA. Mountains
- 21 - Klamath and Shasta Valleys
- 22 - Sierra Nevada Range
- 29 - S. Nevada Basin

NEWLY RELEASED PLANTS FROM THE LOCKEFORD PMC

LK 517f Germplasm Saltgrass *Distichlis spicata* 2001 # 9032700

Application for Selected Reproductive Material Certification

David A. Dyer, Plant Materials Center Manager, USDA Natural Resources Conservation Service, P.O. Box 68, Lockeford, California, 95237

Phone: 209-727-5319; E-mail: Dave.Dyer@ca.usda.gov

A. Genus: *Distichlis* Species: *spicata* (L.) Greene

Variety/ssp: Select class LK 517f Germplasm Common Name: Saltgrass

B. Origin of the material.

State: CA County: Tulare Elevation: 246 feet MLRA: 17f

Mean Annual Precipitation: 7 to 10 inches

C. Method of Selection for Selected and Tested Materials. LK 517f saltgrass was selected and tested by the USDA Natural Resources Conservation Service under accession number 9032700.

LK 517f saltgrass was collected from a native stand near Pixley, California at an elevation of 246 feet above sea level, (legal description T023S – R24E – S10). Employees of the NRCS (formerly the Soil Conservation Service) originally obtained the plant material on May 31, 1982. It was evaluated in a common garden at Lockford plant materials center against 70 other populations assembled from California. In 1993 six accessions were selected for advanced evaluations. In 1993, a replicated advanced evaluation planting of the six accessions was established near Winters, California. The advanced evaluation site had clay soils and was on the side slopes of an irrigation canal. In October 1994, an evaluation confirmed that accession number 9032700 was superior.

D. Botanical/Objective description of species. LK 517f saltgrass is a California native, perennial, warm season grass with extensive creeping, yellowish, scaly rhizomes forming large colonies. LK 517f is coarse-leaved with an average leaf width of .120 inches; average leaf length of 2.9 inches; average height of 8.0 inches.

E. Evidence for Selected Material supporting identity of the species and performance characteristics. LK 517f was not bred but selected for its overall performance and uniformity. It has been evaluated for foliage abundance and uniformity, vigor, and resistance to disease and drought.

Summary of performance data of LK517f saltgrass, *Distichlis spicata*. Randomized block plots with four replications. Evaluation taken October 1994 near Winters, California. F-A = Foliage Abundance, F-U = Foliage Uniformity, V = Vigor, DI = Disease, DR = Drought.

F-A	F-U	V	DI	DR
4	4.5	3	4	4

Rating criteria: 1= excellent, 9 = poor

F. Area of adaptation and primary use of Selected Materials. LK517f saltgrass primary adaptation is to MLRA 17f; However, it is also adapted to MLRA's 16, 18 and all of MLRA 17. Establishment should be in the late spring using rhizomes or plugs planted on one-foot centers. Irrigation water should be applied the first summer to ensure stand establishment. LK517f saltgrass is used for riparian restoration and bank and shoreline stabilization.

G. Procedure for maintaining planting stock. The Lockford PMC will maintain breeders and foundation planting stock.

H. Additional restrictions. None.

I. Reference specie sample sent with application forms.

J. Site description. The soil found at the collection site is a deep, poorly drained clay with a clay loam substratum. Slope is 0 to 1 percent. There is a perched water table at a depth of 3 to 6 feet. Annual rainfall is 7 to 10 inches.

K. Information to assist field inspectors. Average height 8.0 inches, average leaf width .120 inches, average leaf length 2.9 inches.

L. Literature review. There is a need for an adapted variety of saltgrass for use through out parts of central California for riparian restoration use and for bank and shoreline stabilization. Saltgrass does not grow straight, but sprawls and forms dense mats. It is a perennial California native grass and grows in or near marsh areas. It is a warm season grass, growing from April to November. Saltgrass can be used for forage. Also, it can tolerate both water logging and long periods of drought.

M. Availability of plant material. Rhizomes or plugs will be made available through the Foundation Seed Service, University of California, Davis.

1. Annual Technical Report – Los Lunas Plant Materials Center, 1980.
2. Reduction of Levee Erosion in the Sacramento – San Joaquin Delta, Department of Environmental Horticulture, UC Davis.
3. The Jepson Manual of Higher Plants of California, Hickman, Ed., 1993.
4. Saline Agriculture, International Affairs National Research Council, 1990.
5. Grass, an Identification Guide, Lauren Brown, 1979.

PLANT RELEASES FROM THE LOCKEFORD PMC

Scientific	Common	Release	Year
<i>Arctostaphylos patula</i>	greenleaf manzanita	Altura	1989
<i>Atriplex canescens</i>	fourwing saltbush	Marana	1979
<i>Atriplex lentiformis</i>	big saltbush	Casa	1979
<i>Bromus carinatus</i>	California brome	Cucamonga	1949
<i>Bromus hordeaceus</i> ssp.	soft chess	Blando	1954
<i>Ceanothus cordulatus</i>	mountain whitethorn	Maleza	1989
<i>Ceanothus x flexilis</i>	ceanothus	Cuesta	1991
<i>Cleome isomeris</i>	bladderpod	Dorado	1979
<i>Dactylis glomerata</i>	orchardgrass	Akaroa	1953
<i>Dactylis glomerata</i>	orchardgrass	Berber	1981
<i>Elymus glaucus</i>	blue wildrye	Mariposa	2000
<i>Eriogonum fasciculatum</i>	California buckwheat	Duro	1983
<i>Eriogonum umbellatum</i> var. <i>polyanthum</i>	sulphur flower buckwheat	Sierra	1987
<i>Leymus triticoides</i>	beardless wildrye	Rio	1991
<i>Lolium rigidum</i>	annual ryegrass	Wimmera 62	1962
<i>Nassella cernua</i>	foothill needlegrass	LK415f Germplasm	1998
<i>Nassella pulchra</i>	purple needlegrass	LK115d Germplasm	1998
<i>Nassella pulchra</i>	purple needlegrass	LK215e Germplasm	1998
<i>Nassella pulchra</i>	purple needlegrass	LK315d Germplasm	1998
<i>Phalaris aquatica</i>	koleagrass	Perla	1970
<i>Purshia tridentata</i>	bitterbrush	Lassen	1984

Trifolium hirtum	rose clover	MonteFrio	1991
Trifolium hirtum	rose clover	Wilton	1967
Vicia villosa ssp. varia	woollypod vetch	Lana	1956
Vulpia myuros	annual fescue	Zorro	1977

CURRENT STUDIES AND INITIAL AND ADVANCED EVALUATION PLANTINGS

The following studies were requested from NRCS field offices and relate to the Plant Materials Program and Lockeford PMC strategic plan and business plan. In many cases, the NRCS field office staff worked closely with Dave Dyer, PMC Manager, in developing these studies and in some locations they took the lead in data collection. Many landowners helped with site preparation, plot lay out, fencing, planting and application of treatment materials and management treatments. Also, due to NRCS field office and Lockeford PMC staff networking efforts, many NRCS partners and Conservation Districts helped make these studies happen.

Study Number 0610008B *Nesella pulchra* genetic analysis

Study Confirm diversity of *Nesella pulchra* with ARS and San Francisco urban office. A paper titled Nucleotide Sequence Variation Among Natural Populations and Commercial Germplasm Sources of Purple Needlegrass was developed and was sent to field offices as a technical note.

Purpose	Technology Development	Species	1
Funding:	other	Native	1
Duration	1998 - 2001	Accessions	10
National	Natural Areas 1.1	Accessions	0
Status	Active Plots:		0
	Type: Advanced	Evaluations	1

Evaluated: Y

<u>SWAPA+H:</u>	<u>NRCS</u>		<u>Resource</u>
Human	CRP	10%	Buffers
Plants	CTA	10%	Grazing Land Conservation
Soil	EQIP	10%	Invasive species
	EWP	10%	Native Species
	GLCI	20%	
	UR	30%	
	WHIP	10%	

A paper titled "Mode of reproduction and amplified fragment length polymorphism variation in purple needlegrass (*Nassella pulchra*): utilization of natural germplasm sources" was developed. The paper was published in the British Journal of Molecular Ecology (2001) 10, 1165-1177. This paper was an USDA team effort involving the Agricultural Research Service, Natural Resources Conservation Service - Lockeford Plant Materials Center and San Francisco Urban Office.

The paper provides a source of information and background for personnel who are providing restoration and revegetation alternatives to landowners. It gives guidance on the genetic diversity of purple needlegrass and the result of distance from the seed source to the planting site. The USDA-ARS did the laboratory work and data analysis. LK315d purple needlegrass was determined to have a high level of genetic diversity and would be very appropriate for use in the eastern bay area and close enough to the San Francisco population to be considered for use in the western bay area.

Study Number 06C0003A Vegetative control of Medusahead

Study Evaluate Lana vetch broadcast seeding rates with P application for control of Medusahead.

Purpose Technology Development

Species 1

Funding: NRCS

Native 0

Duration 1999 - 2002

Accessions 1

National Rangeland 1.1

Status Active

Type: Advanced

Evaluated: Y

Accessions 0

Plots: 18

Evaluations 1

<u>SWAPA+H:</u>	<u>NRCS</u>		<u>Resource</u>
Animals	CRP	20%	Buffers
Human	CTA	20%	Grazing Land Conservation
Plants	EQIP	20%	Invasive species
Soil	GLCI	20%	Soil, Water, and Air Quality - Other
	WHIP	20%	

ABSTRACT

'Lana' vetch was broadcast seeded with phosphate fertilizer to determine the optimum seeding rate. 'Lana' vetch was successful the first year at the Jackson, California, site in controlling Medusahead when planted at 20 pounds of pure live seed per acre.

INTRODUCTION

Improved methods for the control of the invasive specie Medusahead, *Taeniatherum asperum*, are needed. Medusahead has invaded large areas of rangeland in California and western Oregon and its spread is continuing at a rapid rate. Over-seeding with 'Lana' vetch, *Vicia dasycarpa*, a self-perpetuating annual legume, appears to be a cost effective practical control (1). 'Lana' vetch can be broadcast seeded on rough terrain and established without seedbed preparation. Over-seeding with 'Lana' vetch results in improved forage quality and control of Medusahead. 'Lana' vetch is an improved variety of woollypod vetch which is a reliable self-seeding winter-active annual legume developed by the USDA Natural Resources Conservation Service Lockeford Plant Materials Center. This study evaluated three different broadcast-seeding rates of 'Lana' vetch and phosphate fertilizer applications.

METHODS AND MATERIALS

A randomized block design was used with three treatments and three replications. 'Lana' vetch was broadcast seeded at 12, 16, and 20 pounds of pure live seed (PLS) per acre near Jackson, California, (Camanche hunting club, 600 foot elevation, clay loam soil) and near Red Bluff, California, (1200 foot elevation, clay soil). Phosphate fertilizer with a 0-45-0 formulation was applied to all plots at the time of seeding at a 200 pounds per acre rate. The plots were 20 by 20 feet in size.

RESULTS AND DISCUSSION

'Lana' vetch exhibited poor performance at the Red bluff site. It did produce 13% ground cover by the end of the second year, which was not enough to control Medusahead.

'Lana' vetch showed excellent performance during the first year at the Jackson site. During the first year the 16 PLS pounds per acre rate had a 83.3 % average ground cover and the 20 PLS pounds per acre rate produced an 87.5 % average ground cover. 'Lana' vetch was successful during its first year of establishment and growth in controlling Medusahead. During the second year of evaluations there was a dramatic drop in the 'Lana' vetch ground cover that resulted in a lack of control of Madusahead. This decline was due to phosphate fertilizer not being applied the second year (1).

CONCLUSION

Where 'Lana' vetch is well adapted, it may be successfully broadcast seeded and used to control Medusahead in combination with applications of phosphate fertilizer. Phosphate fertilizer must be applied each year to maintain a high level of Lana vetch ground cover (1). The optimum seeding rate for Lana vetch is 20 PLS pounds per acre.

Table 1. Evaluation of 'Lana' vetch by treatments

<u>Location</u>	<u>Treatment (PLS #/acre)</u>	<u>Average % Cover (2000)</u>	<u>Average % Cover (2001)</u>
Red Bluff	12	3.3	5.0
	16	2.7	13.3
	20	3.0	8.3
Jackson	12	45.0	21.7
	16	83.3	20.0
	20	87.5	11.7

REFERENCES

1) Lana Vetch for Medusahead Control, Robert S. MacLauchlan, Journal of Range Management, Vol. 23, No 5, September 1970, pp. 351-353.

Study Number 06C0005Z Evaluation of native American basket weaving species

Study Develop germination, propagation and establishment methods. Seeking additional bear grass seed collections, initial bear grass collections had 0 germination. In 2003, PMC staff will make sedge root and seed collections at PMC and will determine best propagation methods. No evaluation data at this time. This study is related to a aboriginal management of the PMC riparian area.

Purpose Technology Development

Funding: NRCS

Duration 1999 - 2003

National Natural Areas 1.1

Status Active

Species 2

Native 2

Accessions 2

Accessions 0

Plots: 2

Type: Advanced

Evaluations 1

Evaluated: Y

<u>SWAPA+H:</u>	<u>NRCS</u>		<u>Resource</u>
Air	CTA	60%	Buffers
Animals	EQIP	30%	Native Species
Human	WHIP	10%	Outreach
Plants			
Soil			
Water			

Aboriginal Management of Riparian Environments in Central California

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M.A. Fellow
Geography Graduate Group
152 Walker Hall
University of California, Davis
Davis, California 95616

Introduction:

Since submittal of the fellowship proposal in 2002, numerous events have led to the modification of scope and intent of the research that was proposed at that time. Specifically, the following have contributed to the modification of the research:

- 1) Instead of conducting research solely at the Cache Creek Nature Preserve (CCNP) in Woodland, California, a secondary research site has been secured at the Natural Resource Conservation Service's Plant Material Center (PMC) in Lockeford, California. The addition of this second research site broadens the scope of the work by doubling the number of transects for treatment analysis. Similarly, the two sites provide an opportunity for comparison between geographic locations.
- 2) A third party public entity not involved in this research objected to the treatments at the PMC research site, causing substantial delay in the final treatment of prescribed burning.
- 3) With the encouragement of community members and my graduate advisor, the focus of my research is currently evolving from a Master Thesis project toward Ph.D. dissertation research.

Considering the above noted changes to the scope and intent of this research, the goals, objectives, and hypotheses initially stated in my research proposal have been modified to reflect the current status of my research.

To summarize the proposal, the primary objective of this research is to identify the effects of prescribed fire on riparian ecosystems in central California. Specifically, this research will attempt to identify how fire can be used as a tool for resource management and conservation. Additionally, this research will attempt to define the historic and contemporary context for aboriginal land management practices and regimes in riparian ecosystems.

The hypotheses this research will attempt to verify are as follows:

1. Does native plant diversity and/or density increase following treatment (coppicing and burning)?
2. Which season of burn (spring or fall) minimizes adverse effects to native flora and fauna?
3. What is the intensity (temperature) and duration of fire in various vegetation types, and do these parameters vary seasonally?
4. How is fire management from a historic perspective different from fire management in the contemporary?
5. What is the fire history or regime within representative riparian ecosystems in central California?

Preliminary Findings:

Prescribed burns at the CCNP were carried out on November 20 and 27, 2002 respectively, and prescribed burn at the PMC was carried out on December 8, 2002. During these fire events, various observations were made of fire conditions and wildlife activity. The fires were generally low intensity with average flame heights less than 3 feet. Primary fuels ignited were leaf litter and woody fuels less than one inch in diameter along with grasses and forbes. During and after the fire events, community participants observed the activity levels of wildlife within the treated areas. Of the target species (small mammals, reptiles, and amphibians) identified for monitoring effects, no mortality was observed. Wildlife species observed included western fence lizard (*Sceloporous occidentalis*), cottontail rabbits (*Sylvilagus* spp.), and various passerine species. It is worthy to note that during the pre-burn trapping, only young of the year *S. occidentalis* were trapped or observed during the fall trapping period. No *S. occidentalis* were trapped at either site after November 5, 2002. However, during the fires at both the CCNP and PMC several adult *S. occidentalis* were observed active within the treated areas. Specifically, adults were observed moving about the charred and actively burning duff. The behavior of these individuals was noted as they burrowed into the warm ash in what appeared to be dust bathing. Similarly, various

unidentified species of spiders were observed active within the burn areas, passing through flaming fronts and emerging on the other side apparently unharmed. Peak avifauna activity was observed within and above the burning area. Based on witness observations, it is presumed that avian activity focused around the foraging of insects, which were also active during the fires. Following the fires at the CCNP, it has been noted that mule deer (*Odocoileus hemionus*) activity increased within the burned areas. Specifically, the burned areas demonstrated an observed increase in tracks and bedding areas in comparison with unburned areas.

As stated in greater detail in the “Research Experience to Date” section below, there were difficulties in igniting the fuels at the PMC site. The observations of fire behavior between the fires at the CCNP and PMC exemplified the role weather conditions can have on fire properties. Fire behavior at both sites largely was regulated by fuel moisture and humidity. Thus, it was helpful to have several community members present to assist in ignition and spread of the fire. The figures below represent fire temperature and duration data collected at the CCNP on November 27, 2002 with an ambient air temperature of approximately 63 ° F, wind speed average of less than one mile per hour, and relative humidity of 30 percent.

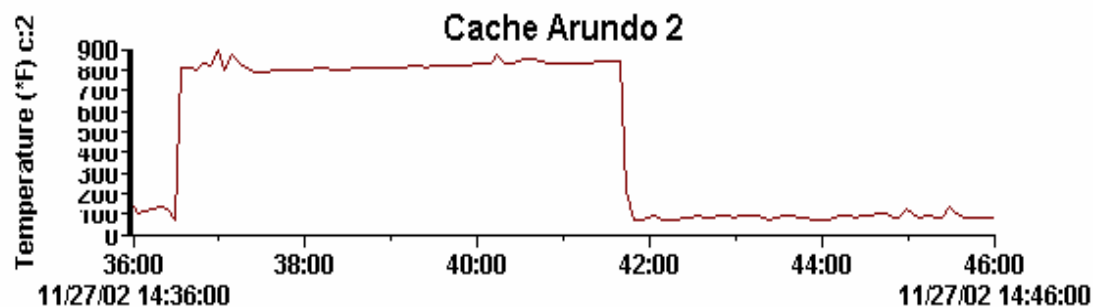


Figure 1. This graph depicts the intensity and duration of fire in *Arundo* wood chip duff. As exemplified by the graph, the fire in this fuel type under the burn conditions reached approximately 800 F and maintained this intensity for approximately five minutes.

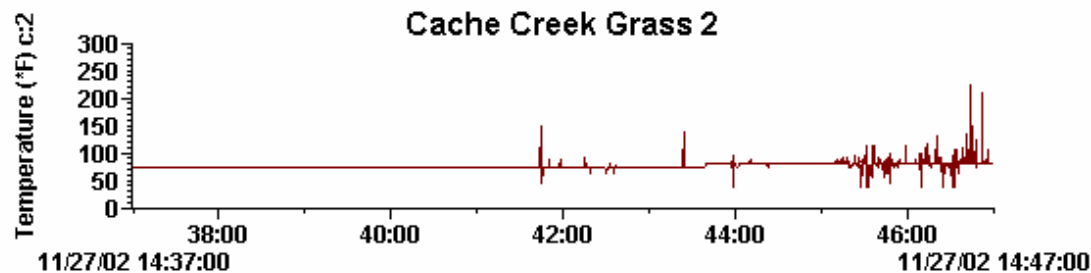


Figure 2. This graph depicts the intensity and duration of fire in a stand of *Carex barbarae*. As exemplified by the graph, the fire in this fuel type under the burn conditions reached approximately 275 F and maintained this intensity for only a few seconds. Additional peaks observed in this graph are likely representative of repeated dousing by the drip torch to test the data logger.

Field Experience to Date:

As indicated in the introduction, the delay in burn treatment at the PMC was initially caused by objections of a third party public entity. Specifically, this entity had been conducting biological monitoring that included stations within the research site at the PMC. Coordination with this entity began approximately one year prior to initiating research at this site. During previous discussions of this research, the entity appeared very supportive of the proposed research. However, as the target date for the burn treatment approached, the entity objected for fear that any burn treatment in the vicinity of their monitoring area might skew the results of their monitoring efforts. Several attempts were made to identify areas where their monitoring might have been affected by this research. However, the staff of the public entity refused to meet to work to a mutually agreeable implementation strategy. In order to maintain peace between the entity, community host, and the research, I delayed the burn treatment until their monitoring season was complete. This automatically meant that the objectives of burn timing following seasonal precipitation would not be met at the PMC. Discussion with community members led to a mutual agreement that we should still attempt to burn this season at the earliest possible date.

This posed another problem with scheduling a burn at the PMC. Specifically, the PMC is within the jurisdiction of the San Joaquin Valley Air Quality Control Board. Regulation of air quality within the San Joaquin Valley is among the most

stringent in the United States. Due the season and weather patterns at the desired time of burning, permissible burn days were severely limited. The desired window to burn would have occurred approximately mid-November 2002. However, we were finally granted permission to burn on December 8, 2002. By this date, the PMC had received several inches of precipitation in the form of rain events and dense fog. Thus, many grasses had germinated and the burnable fuels had been dampened considerably. In consideration of the next possible burn day, it was decided to attempt to burn specific areas limited to plots surrounding and including the line transects. Considerable energy was devoted to accomplishing the burn objectives within these relatively small units. Regardless, we were able to achieve treatments within the desired units.

As result of these combined events, the hypotheses were modified to include comparison between fall and spring burning. Thus, this spring four new line transects will be established in the treatment areas at the CCNP and PMC to test seasonal variation in burn treatments.

Successes and Challenges:

Aside from the difficulties previously mentioned, the fieldwork has been quite successful. The CCNP graciously contracted the California Conservation Corps to complete the coppice treatment (i.e., ladder fuel removal) in the treatment area. At the PMC, community volunteers contributed 10 weekends of work to complete the coppice treatment. Since completion of the coppicing and fall burn prescriptions, additional volunteers have offered their assistance for future treatments and research needs.

One of the challenges of this research is coordination and timing of research activities between research sites and participatory communities. Through this process, I have learned the community extends beyond both the Native American and host communities at each research site as represented by recruitment of volunteers from outside of these communities

Lessons Learned Thus Far:

In any research, there must be room for modification of the applied research. I was not anticipating any difficulty in meeting my research objectives this season. However, the obstacles encountered have caused me to reconsider alternatives with the community and devise additional hypotheses that are believed to strengthen the value of this research. Essentially, the lesson is to maintain an open mind and be willing to deviate from the desired path of research when absolutely necessary.

Future Research Directions:

At present, multiple opportunities exist for this research to expand into new research sites and new research communities. Specifically, there has been some interest in furthering this research by investigating the role of fire in the conservation needs of the federally endangered riparian brush rabbit (*Sylvilagus bachmani riparius*). Specifically, species experts have expressed an interest in researching the effects of fire on the riparian brush rabbit. An unpublished report by Close and Williams¹ specifies the need to research the role of fire as a conservation tool for the riparian brush rabbit, and also cites the role of the California Indian Basketweavers Association (CIBA) as an integral partner in conducting this research. This is research of interest to several community members and myself due to our resource conservation objectives and involvement with CIBA. Additionally, I have learned of similar research efforts in northern Australia among Aboriginal groups in Kakadu National Park. Preliminary research into fire and Aboriginal practices and policies in Australia demonstrates numerous avenues for comparative community participatory research. Largely, I see the potential research in Australia as an opportunity to study the continuity of continued Aboriginal land management practices as well as how policy within the region could serve as a model for how things might be improved in California. I have been offered the opportunity to pursue these options of broadening my research, however, further consideration is required to determine the practicality and feasibility of either of these options. Certainly both are of interest to me, and provide an interesting situation to diversify the participant pool into a larger research project.

¹ Close, C.L. and D.F. Williams. date unknown. *Habitat Management for Riparian Brush Rabbits and Woodrats With Special Attention to Fire and Flood*. http://arnica.csustan.edu/esrpp/caswell_sum.htm

Study Number 06C0009H Templeton range seeding trail

Study Select best cultivars and seed mixes. Field office and extension staff has the lead on this study. PMC and state range conservationist is helping with the evaluations. This seeding trail study which evaluated four seed mixes which were replicated three times and has three different grazing intensities (moderate, heavy and no grazing). Sixteen single species were seeded with three replications. The moderate grazing treatment appears to render the highest number of seedlings per square foot. The orchard grass has produced the most seedlings, far ahead of the other species. The extension service will provide data analysis and a joint paper is being developed.

Purpose Technology Development	Species 16
Funding: NRCS	Native 1
Duration 1999 - 2002	Accessions 16
National Rangeland 1.1	Accessions 0
Status Active	Plots: 48
Type: Advanced	Evaluations 1
Evaluated: Y	

<u>SWAPA+H:</u>	<u>NRCS</u>	<u>Resource</u>
Animals	CRP 30%	Buffers
Soil	CTA 30%	Grazing Land Conservation
Water	EQIP 10%	
	GLCI 20%	
	WQ 10%	

Table 1. Plants and seeding rates used at Varian ranch

Microplot	Common Name	Scientific Name	Seeds per Pound	Seeding Rate Lb./Ac. (Bulk)	Seeds per Sq. Ft. (Bulk)	Grams per Microplot (Bulk)
1	Blue Wildrye	<i>Elymus glaucus</i>	135,300	18.5	57	3.1
2	Hard Fescue	<i>Festuca ovina</i>	565,000	18.5	240	3.1
3	Hardinggrass	<i>Phalaris tuberosa stenoptera</i>	347,000	18.5	147	3.1
4	Orchardgrass	<i>Dactylis glomerata</i>	540,000	18.5	229	3.1
5	Perlagrass	<i>Phalaris tuberosa hirtiglumis</i>	267,000	18.5	113	3.1
6	Slender Wheatgrass	<i>Agropyron trachycaulum</i>	160,000	18.5	68	3.1
7	Mix A:			18.5		3.1
	Hardinggrass (Holdfast) 33.3%	<i>Phalaris tuberosa stenoptera</i>	347,000			
	Perlagrass 33.3%	<i>Phalaris tuberosa hirtiglumis</i>	267,000			
	Orchardgrass (Paiute) 33.3%	<i>Dactylis glomerata</i>	540,000			
8	Mix B:			18.5		3.1
	Perlagrass 48%	<i>Phalaris tuberosa hirtiglumis</i>	267,000			
	Slender Wheatgrass 26%	<i>Agropyron</i>	160,000			

		<i>trachycaulum</i>		18.5	3.1
	Hard Fescue 26%	<i>Festuca ovina</i>	565,000		
9	Mix C:			18.5	3.1
	Orchardgrass (Paiute) 50%	<i>Dactylis glomerata</i>	540,000		
	Hardinggrass (Holdfast) 25%	<i>Phalaris tuberosa</i>	347,000		
		<i>stenoptera</i>			
	Perlagrass 25%	<i>Phalaris tuberosa</i>	267,000		
		<i>hirtiglumis</i>			
10	Mix D			18.5	3.1
	Blue Wildrye 50%	<i>Elymus glaucus</i>	135,300		
	Orchardgrass 50%	<i>Dactylis glomerata</i>	540,000		
11	Bur Medic (Serena)	<i>Medicago</i> <i>polymorpha</i>		27.6	4.6
12	Bur Medic (Santiago)	<i>Medicago</i> <i>polymorpha</i>		27.6	4.6
13	Barrel Medic (Sephi)	<i>Medicago tribuloides</i>		27.6	4.6
14	Barrel Medic (Jemalong)	<i>Medicago tribuloides</i>		27.6	4.6
15	Sub. Clover (Seaton Park)	<i>Trifolium</i> <i>subterraneum</i>		27.6	4.6
16	Sub. Clover (Campeda)	<i>Trifolium</i> <i>subterraneum</i>		27.6	4.6
17	Sub. Clover (Nungarin)	<i>Trifolium</i> <i>subterraneum</i>		27.6	4.6
18	Sub. Clover (Koala)	<i>Trifolium</i> <i>subterraneum</i>		27.6	4.6

19	Sub. Clover (Losa)	<i>Trifolium subterraneum</i>	18.5	3.1
20	Persian Clover (Nitro Plus)	<i>Trifolium resupinatum</i>	27.6	4.6

Table 2. Evaluation of seed mixes at Varian ranch, May 2001.

		Total			Ave	Green			Ave Green	Ave		%	
		Seedlings			Seedlings	Seedlings			Seedlings	Height		Seed	
Microplot	Species	0.25 sq ft			0.25 sq ft	0.25 sq ft			0.25 sq ft	in	Vigor	Prod	Notes
1	HPO (Mix A)	22	19	13	18	16	14	10	13	3	7	0	Harding-33%; Perla-33%; Orchard-33%
2	Campeda Sub Clover	2	0	5	2	2	0	5	2	<1	2	0	
3	Slender Wheatgrass	9	4	3	5	5	4	3	4	<2	5	0	
4	Harding Grass	4	9	5	6	2	5	3	3	<2	4	0	
5	BI Wr/Orchard (Mix D)	17	14	12	14	17	11	12	13	5	9	10	
6	Hard Fescue	34	15	13	21	29	12	12	18	<1	7	0	Blue Wildrye-

													50%, Orchardg rass-50%
7	Seaton Sub Clover	1	4	6	4	1	1	2	1	<1	4	0	
8	HPO (unknown mix)	16	7	12	12	12	4	9	8	3	7	0	Harding, Perla, Orchard - % unknown
9	Santiago Bur Medic	3	13	10	9	0	0	0	0	<1	9	25	
10	Jemalong Barrel Medic	11	14	6	10	0	4	0	1	<1	8	0	
11	Blue Wildrye	9	25	8	14	9	25	8	14	8	10	20	
12	Orchard Grass	29	10	29	23	24	10	26	20	3	8	0	
13	Nitro Persian Clover	15	3	3	7	0	0	0	0	<1	7	0	
14	Perla Grass	13	4	14	10	2	2	4	3	< 2	2	0	
15	OPH (Mix C)	17	24	33	25	13	19	22	18	3	6	0	Orchard- 50%, Perla- 25%, Harding- 25%
16	Serena Bur Medic	8	12	5	8	0	12	1	4	<1	10	50	75% defoliated by insects/ro dents
17	Nungarin Sub Clover												grazed/tr ampled beyond recognitio n

18	Losa Sub Clover														grazed/tr ampled beyond recognitio n
19	Sephi Barrel Medic	12	2	0		5	5	0	0		2	<1	5	0	grazed by cattle; rodent/ra bbit pellets
20	Koala Sub Clover	0	2	1		1	0	0	0		0	<1	1	0	grazed by cattle; rodent/ra bbit pellets

Table 3. Evaluation of seed mixes and seedlings at Varian ranch, May 2001

		Total			Ave	Ave	Green			Ave	Ave	Ave		%
		Seedlings			Seedlings	Seedlings	Seedlings			Seedlings	Seedlings	Height		Seed
Micro plot	Species	0.25 sq ft			0.25 sq ft	per sq ft	0.25 sq ft			0.25 sq ft	per sq ft	in	Vigor	Prod
12	Orchard Grass	29	10	29	23	91	24	10	26	20	80	3	8	0
15	OPH (Mix C)	17	24	33	25	99	13	19	22	18	72	3	6	0
6	Hard Fescue	34	15	13	21	83	29	12	12	18	71	<1	7	0
11	Blue Wildrye	9	25	8	14	56	9	25	8	14	56	8	10	20
1	HPO (Mix A)	22	19	13	18	72	16	14	10	13	53	3	7	0
5	BI Wr/Orchard (Mix D)	17	14	12	14	57	17	11	12	13	53	5	9	10
8	HPO (unknown mix)	16	7	12	12	47	12	4	9	8	33	3	7	0

16	Serena Bur Medic	8	12	5	8	33	0	12	1	4	17	<1	10	50
3	Slender Wheatgrass	9	4	3	5	21	5	4	3	4	16	<2	5	0
4	Harding Grass	4	9	5	6	24	2	5	3	3	13	<2	4	0
14	Perla Grass	13	4	14	10	41	2	2	4	3	11	<2	2	0
2	Campeda Sub Clover	2	0	5	2	9	2	0	5	2	9	<1	2	0
19	Sephi Barrel Medic	12	2	0	5	19	5	0	0	2	7	<1	5	0
7	Seaton Sub Clover	1	4	6	4	15	1	1	2	1	5	<1	4	0
10	Jemalong Barrel Medic	11	14	6	10	41	0	4	0	1	5	<1	8	0
9	Santiago Bur Medic	3	13	10	9	35	0	0	0	0	0	<1	9	25
13	Nitro Persian Clover	15	3	3	7	28	0	0	0	0	0	<1	7	0
20	Koala Sub Clover	0	2	1	1	4	0	0	0	0	0	<1	1	0
17	Nungarin Sub Clover													
18	Losa Sub Clover													

*Vigor Ratings: 1= Excellent, 9= Poor

Study Number 06C0012Z Evaluation of Perla grass for carbon levels and potential for biomass-to-ethanol and global climate change

Study Determine Perla carbon levels. UC Davis will do data analysis and results will be stated when this task is completed.

Purpose Technology Development

Species 1

Funding: NRCS

Native 0

Duration 2000 - 2005

Accessions 1

National Rangeland 1.1

Accessions 0

Status Active

Plots: 9

Type: Advanced

Evaluations 0

Evaluated: N

<u>SWAPA+H:</u>	<u>NRCS</u>	<u>Resource</u>
Air	CRP 20%	Buffers
Human	CTA 20%	Carbon Sequestration
	EQUIP 10%	Grazing Land Conservation
	GLCI 30%	Soil, Water, and Air Quality - Other
	SP 20%	

SOIL NAME	Arbuckle	Cortina	Hillgate	Kimball
SOIL CLASSIFICATION	f-l, superactive thermic Typic Haploxeralfs	l-skel, superact thermic Typic Xerofluvents	fine, smectitic, thermic Typic Paleixeralfs	f, active, thermic mollic Paleixeralfs
SLOPE CLASS(ES) *	0 - 3 percent	nearly level	0-3 percent, 3-8 percent	0-3 percent, 3-8 percent
GEOMORPHIC POSITION	low terraces	alluvial fans and floodplains	low terraces	fan terraces
VEGETATION	range - annual grasses and forbs	rangeland	rangeland	annual grasses and forbs
DEPTH CLASS	very deep	very deep	very deep	very deep
RESTRICTION?	n/a	n/a	n/a; abrupt text chg to clay @ 19"	> 40" if present

DRAINAGE	well	somewhat excessively drained	moderately well drained	well drained
PERMEABILITY	moderately slow to slow	rapid	very slow and slow	very slow
SURFACE TEXTURE	sandy loam	grv sandy loam	loam	loam or gr loam
PARENT MATERIAL	alluvium from conglomerate/metased	mixed source gravelly alluvium	mixed alluvium	mixed alluvium
DEPTH TO CALCAREOUS?	n/a	n/a	> 38"	n/a
pH @ 20 cm *	6.2	6.4	6.3	5.7
SURF MSTR @ 15 BARS (%) *	4.6	4.2	6.1	4.9
C:N RATIO - SURFACE *	10	9	9	13

SOIL NAME	Myers	Newville	Parrish	Sehorn
SOIL CLASSIFICATION	fine, smectitic, thermic Aridic Haploxererts	fine, smectitic, thermic Mollic Palexeralfs	f, vermiculitic, mesic, Ultic Haploxeralfs	f, smect, thermic Aridic Haploxererts
SLOPE CLASS(ES) *	0-3 percent	3 - 10 percent +	10 - 30 percent	10 - 30 percent
GEOMORPHIC POSITION	basins	dissected terraces	uplands	uplands
VEGETATION		annual grass range	brushy range	range
DEPTH CLASS	very deep	moderately deep	moderately deep	moderately deep
RESTRICTION?	n/a	26"	26"	29"
DRAINAGE	well drained	well drained	well drained	well drained
PERMEABILITY	slow	slow	moderately slow to slow	slow
SURFACE TEXTURE	clay	gr loam	gr loam	clay loam
PARENT MATERIAL	mixed alluvium	softly consolidated alluvium	resid of Franciscan sed/metased	residuum from calc sand/shales
DEPTH TO CALCAREOUS?	25" +	n/a	n/a	25" +
pH @ 20 cm *	n/a	n/a	5.7	6.9
SURF MSTR @ 15 BARS (%) *	n/a	7.2	12	19.1
C:N RATIO - SURFACE *	n/a	10	20	10

SOIL NAME	Tehama	Zamora
SOIL CLASSIFICATION	f-s, mixed, thermic, Typic Haploxerafls	f-s, mixed, thermic, Mollic Haploxerafls
SLOPE CLASS(ES) *	0-3 percent, 3-8 percent	0-3 percent
GEOMORPHIC POSITION	fans and terraces	fans and terraces
VEGETATION	dry farmed crops	annual grasses/forbs, occas oaks
DEPTH CLASS	deep to very deep	deep
RESTRICTION?	n/a	n/a
DRAINAGE	well drained	well drained
PERMEABILITY	slow	moderately slow
SURFACE TEXTURE	silt loam	silt loam
PARENT MATERIAL	mixed alluvium	mixed alluvium
DEPTH TO CALCAREOUS?	n/a	51"
pH @ 20 cm *	6.5	7
SURF MSTR @ 15 BARS (%) *	5	11
C:N RATIO - SURFACE *	10	12

* - Soil Survey Tehama
County, CA (1967). Data
may be extrapolated from
geographically similar soils.
All other data from
OSD

**One square foot samples of biomass was sampled and weighed on a digital scale.
No new Perla planting biomass will be sampled until it is established.**

Table 1. Biomass Data

	Old Perla	Annual Range	New Perla
Sample 1 weight (grams/ft²)	56.4	16.6	Not sampled
Sample 2 weight (grams/ft²)	57.7	24.2	Not sampled
Sample 3 weight (grams/ft²)	51.9	25.2	Not sampled
Average weight (grams/ft²)	55.33	22.0	N/A
Average Pounds per Acre	5,309	2,111	N/A

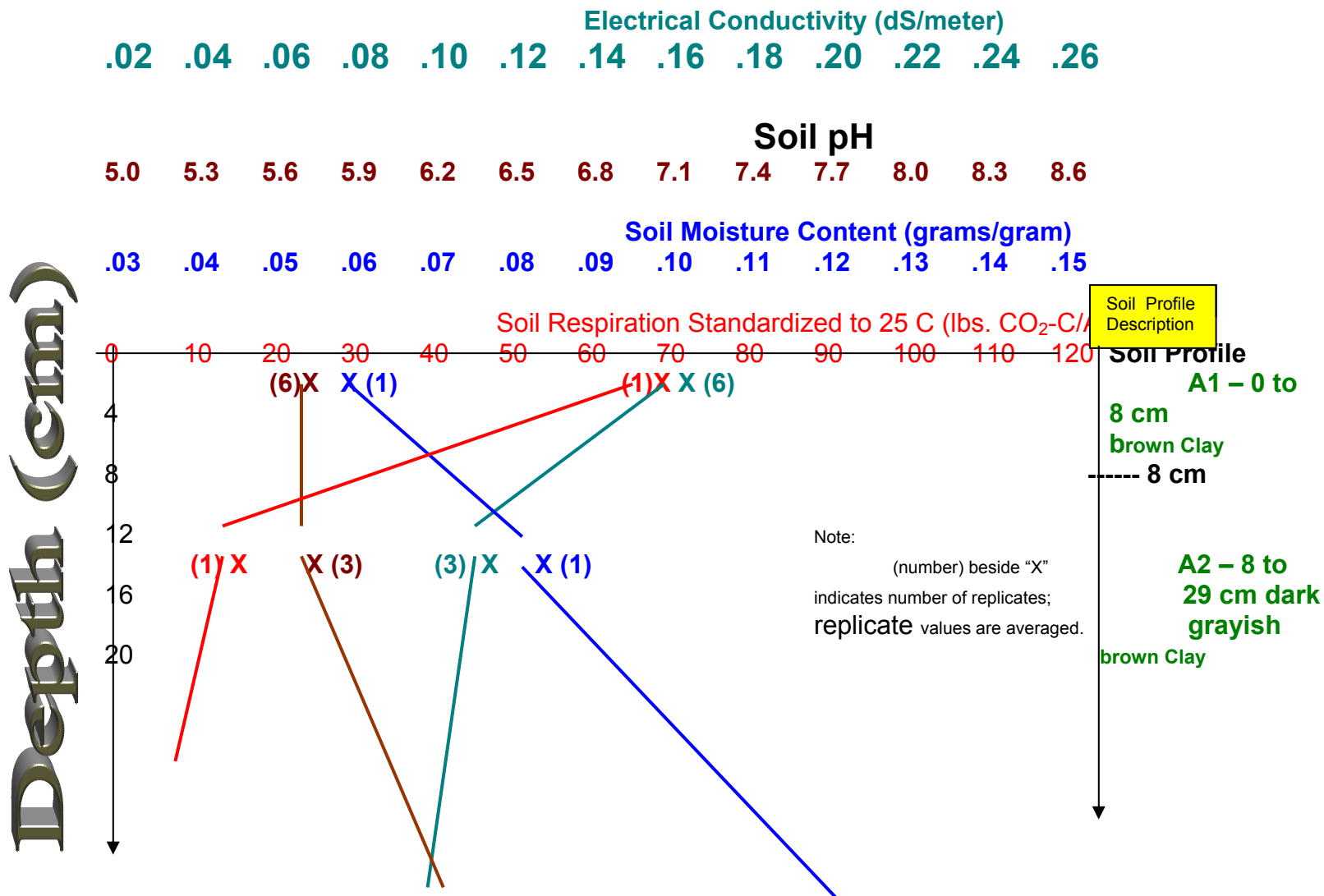
Roots were sifted from one square foot soil for each soil sampling depth and weighed on a digital scale for the 11-year old Perla and annual range grasses. No new Perla planting roots will be sampled until it is established.

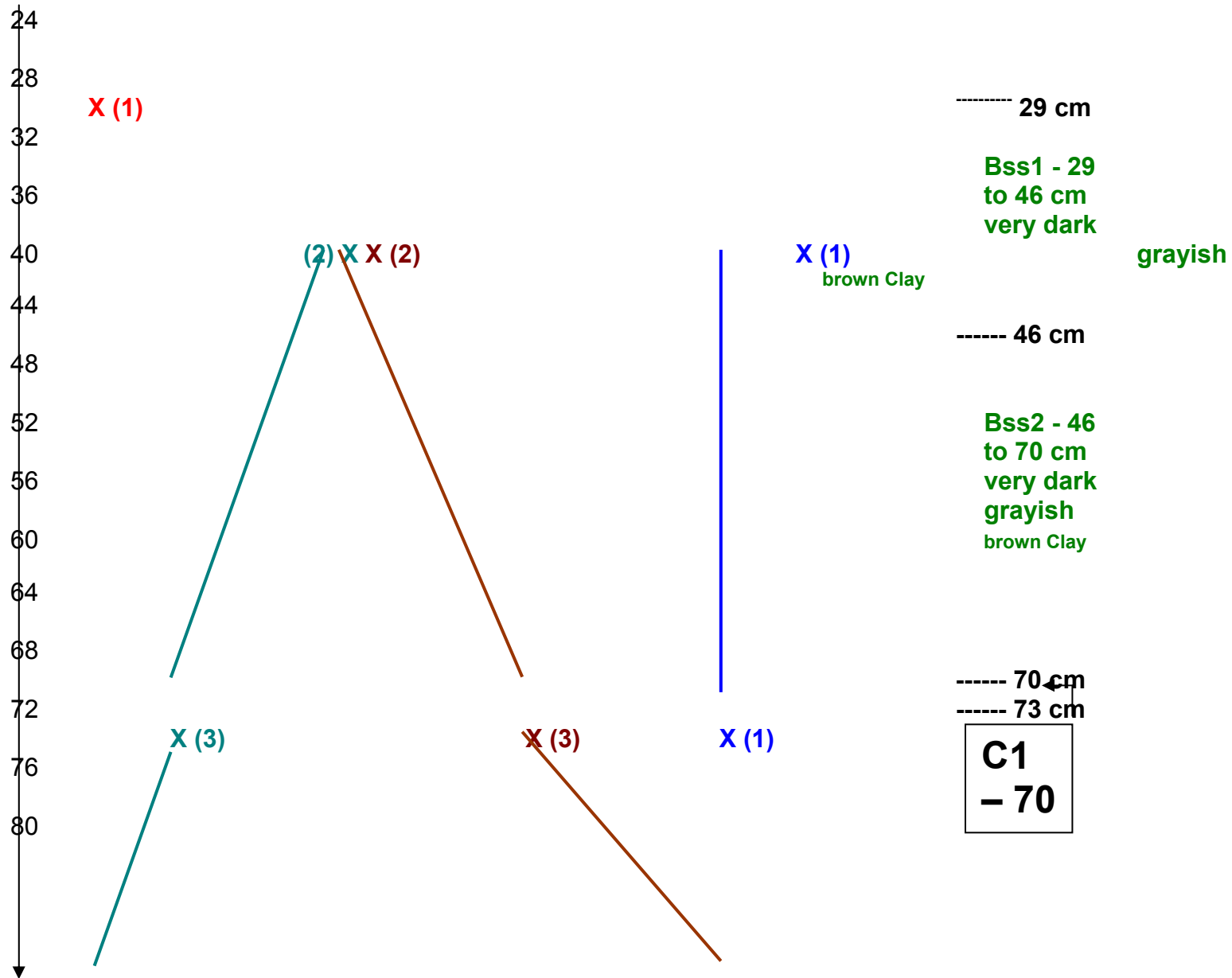
Table 2. Root Data

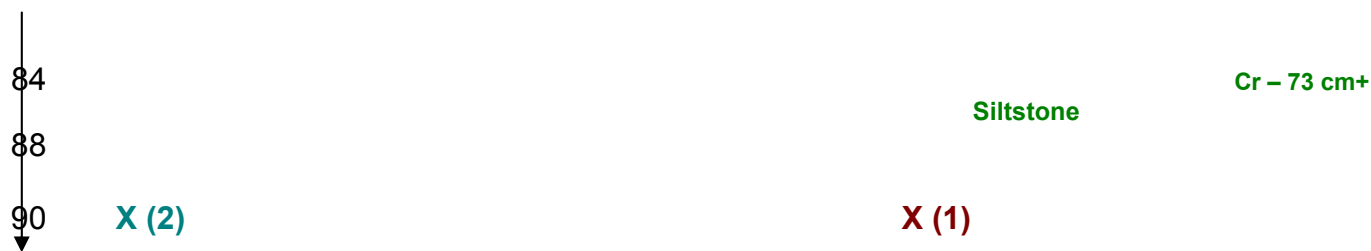
	Old Perla	Annual Range	New Perla
0 – 5 cm (grams/ft²)	218.4	6.6	Not sampled
5 – 15 cm (grams/ft²)	12.8	0.2	Not sampled
15 – 65 cm (grams/ft²)	41.5	Not measurable	Not sampled
65 – 86 cm (grams/ft²)	19.6	Not measurable	Not sampled

85 – 100 cm (grams/ft ²)	2.8	Not measurable	Not sampled
Profile Total (grams/ft ²)	295.1	6.2	N/A
Pounds / Acre (0 – 100 cm)	28,314	652.44	N/A

Pit 1. Yolo Conservation Field Trial, Yolo L&C Annual Range, Year 2001 Data







Pit 2. Yolo Conservation Field Trial, Pete's Valley Perennial Range, Year 2001 Data

Electrical Conductivity (dS/meter)
.02 .04 .06 .08 .10 .12 .14 .16 .18 .20 .22 .24 .26

Soil pH
5.0 5.3 5.6 5.9 6.2 6.5 6.8 7.1 7.4 7.7 8.0 8.3 8.6

Soil Moisture Content (grams/gram)
.03 .04 .05 .06 .07 .08 .09 .10 .11 .12 .13 .14 .15

Soil Respiration Standardized to 25 C (lbs. CO₂-C/m²/hr)
0 10 20 30 40 50 60 70 80 90 100 110

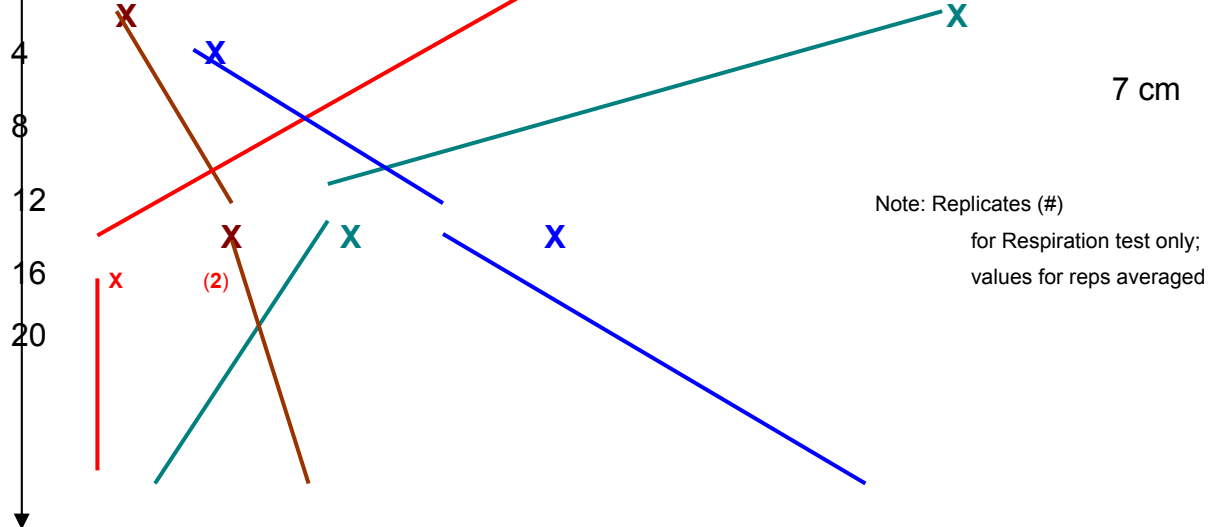
Soil Profile Description

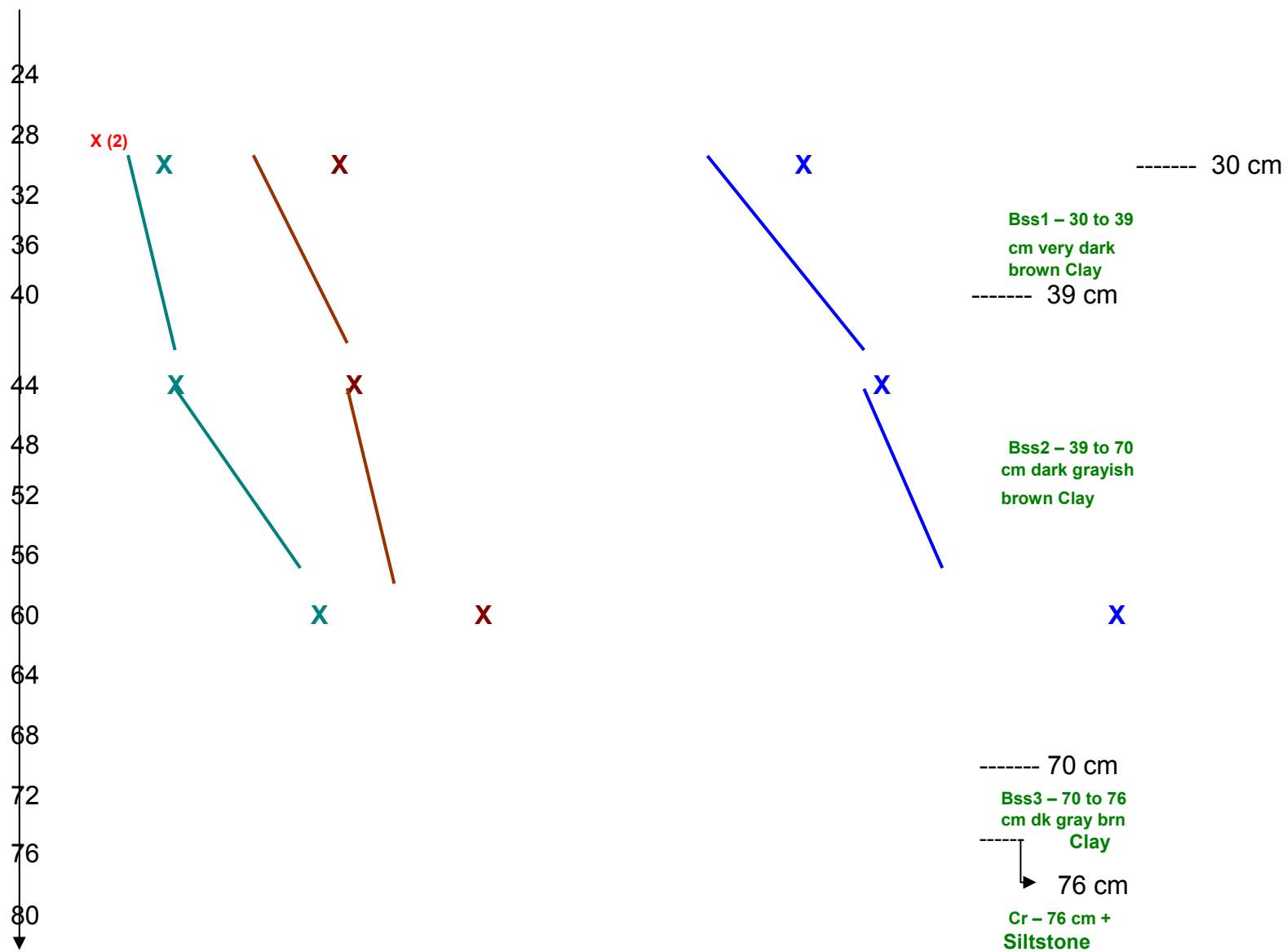
Ap – 0 to 7 cm
dk gray brown
----- Silty Clay

A1 – 7 to 30 cm
very dk gray-
sh brown Clay

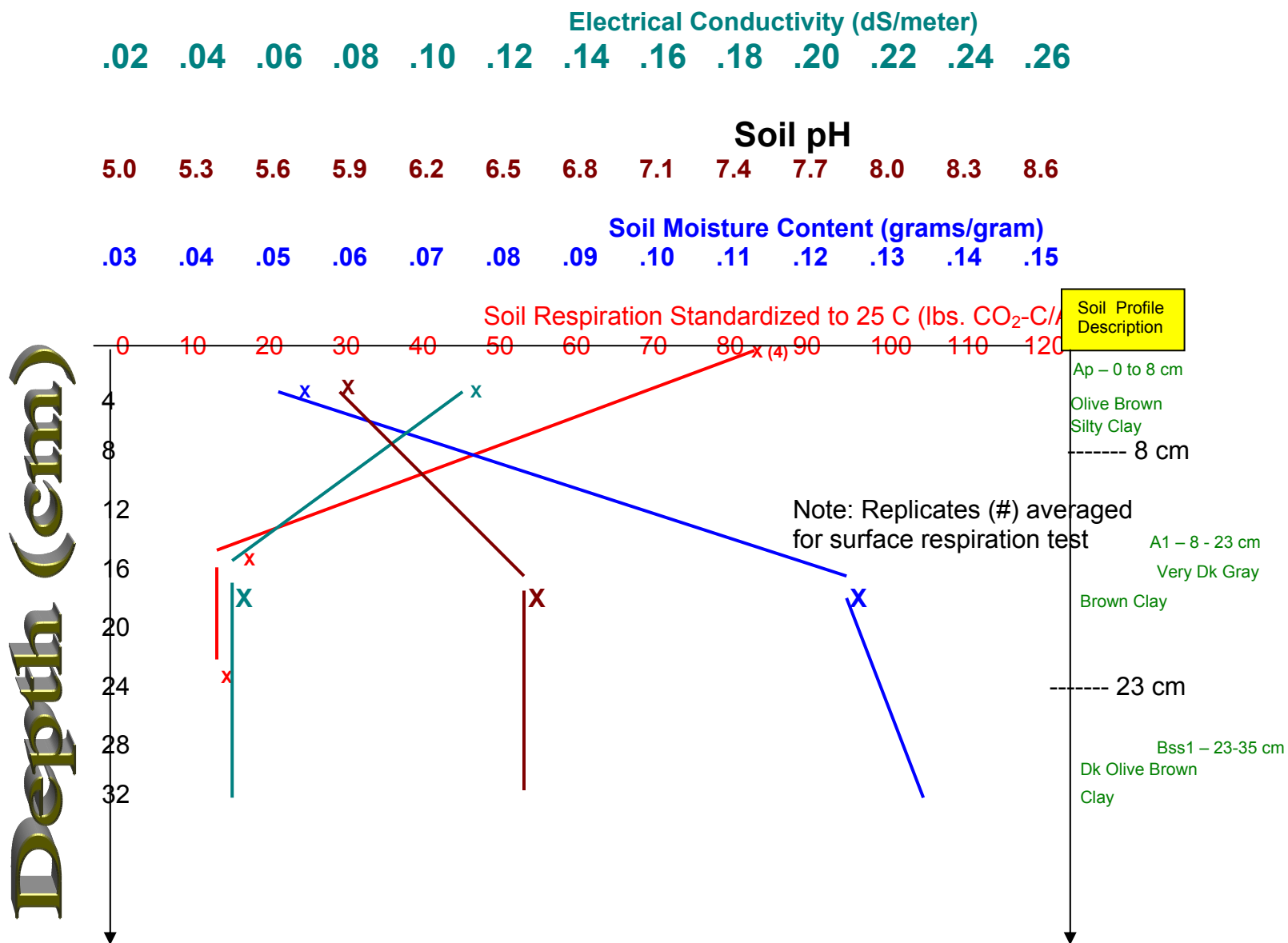
Note: Replicates (#)
for Respiration test only;
values for reps averaged.

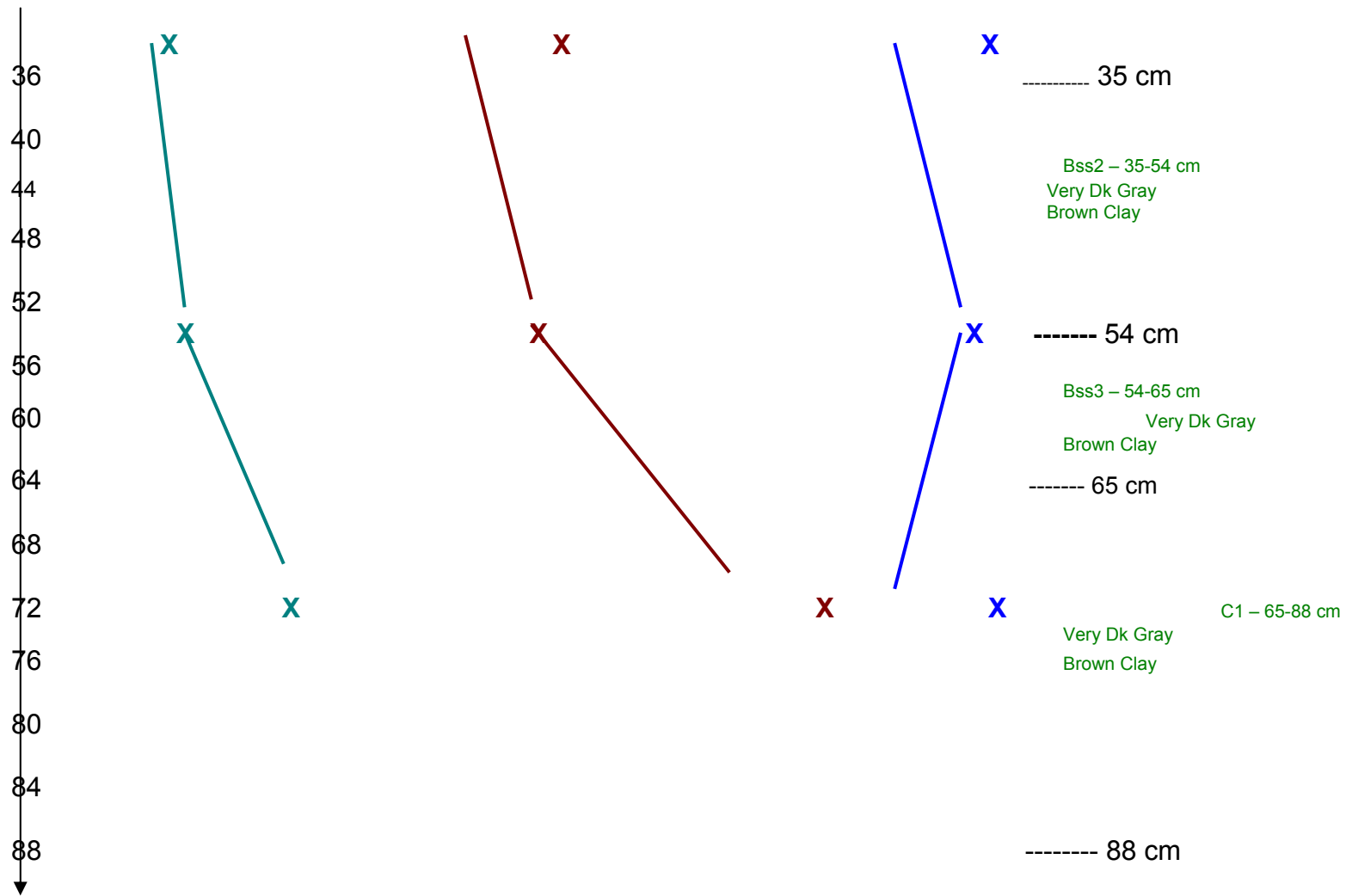
Depth (cm)





Pit 3. Yolo Conservation Field Trial, Yolo L&C Perennial Range, Year 2001 Data





Bio-mass eucalyptus clone selections study

Study Select best clone for bio-mass use. Eucalyptus Improvement association is the project leader with four sites in California. EIA has data collection and analysis lead and they will make final selections. EIA has had a very low level of activity in recent years and has collected no data in the past five years. EIA has been requested to complete this study. No action to date.

Purpose Release

Species 1

Funding: Other

Native 0

Duration 1991 - 2002

Accessions 30

National Forestland 1.1

Accessions 0

Status Active

Plots: 120

Type: Initial

Evaluations 0

Evaluated: N

<u>SWAPA+H:</u>	<u>NRCS</u>		<u>Resource</u>
Air	CTA	40%	Buffers
Human	FIP	20%	Carbon Sequestration
Plants	UR	20%	Soil, Water, and Air Quality - Other

Eucalyptus evaluation for windbreak use study.

Study Release improved windbreak tree. One selection has been made and the development of a release notice is in progress. No new data has been collected in the past year.

PurposeRelease **Species** 45

Funding: NRCS

Native 0

Duration1982 - 2001

Accessions 52

National Cropland 3.1

Accessions 2

Status Active

Plots: 52

Type: Initial

Evaluations 1

Evaluated: Y

<u>SWAPA+H:</u>	<u>NRCS</u>		<u>Resource</u>
Air	CTA	40%	Buffers
Animals	EQIP	30%	Carbon Sequestration
Human	UR	30%	Soil erosion and sediment control - Agriculture
Soil			Soil, Water, and Air Quality - Other

Evaluation of saltgrass study

Study Release developed.

Purpose Release

Species 1

Funding: Other

Native 1

Duration 1981 - 2001

Accessions 40

National Water Quality 3.1

Accessions 1

Status Completed

Plots: 40

Type: Advanced

Evaluations 1

Evaluated: Y

<u>SWAPA+H:</u>	<u>NRCS</u>		<u>Resource</u>
Animals	CTA	20%	Buffers
Plants	EWP	20%	Invasive species
Soil	UR	10%	Native Species
Water	WHIP	10%	Riparian
	WQ	20%	Soil erosion and sediment control - Agriculture
			Soil erosion and sediment control - Urban

Application for Selected Reproductive Material Certification

Name/Address of Applicant/Collector

David A. Dyer, Plant Materials Center Manager, USDA Natural Resources Conservation Service, P.O. Box 68, Lockeford, California, 95237

Phone: 209-727-5319; E-mail: Dave.Dyer@ca.usda.gov

A. Genus: *Distichlis* Species: *spicata* (L.) Greene

Variety/ssp: Select class LK 517f Germplasm Common Name: Saltgrass

C. Origin of the material.

State: CA County: Tulare Elevation: 246 feet MLRA: 17f

Mean Annual Precipitation: 7 to 10 inches

C. Method of Selection for Selected and Tested Materials. LK 517f saltgrass was selected and tested by the USDA Natural Resources Conservation Service under accession number 9032700.

LK 517f saltgrass was collected from a native stand near Pixley, California at an elevation of 246 feet above sea level, (legal description T023S – R24E – S10). Employees of the NRCS (formerly the Soil Conservation Service) originally obtained the plant material on May 31, 1982. It was evaluated in a common garden at Lockford plant materials center against 70 other populations assembled from California. In 1993 six accessions were selected for advanced evaluations. In 1993, a replicated advanced evaluation planting of the six accessions was established near Winters, California. The advanced evaluation site had clay soils and was on the side slopes of an irrigation canal. In October 1994, an evaluation confirmed that accession number 9032700 was superior.

D. Botanical/Objective description of species. LK 517f saltgrass is a California native, perennial, warm season grass with extensive creeping, yellowish, scaly rhizomes forming large colonies. LK 517f is coarse-leaved with an average leaf width of .120 inches; average leaf length of 2.9 inches; average height of 8.0 inches.

M. Evidence for Selected Material supporting identity of the species and performance characteristics. LK 517f was not bred but selected for its overall performance and uniformity. It has been evaluated for foliage abundance and uniformity, vigor, and resistance to disease and drought.

Summary of performance data of LK517f saltgrass, *Distichlis spicata*. Randomized block plots with four replications. Evaluation taken October 1994 near Winters, California. F-A = Foliage Abundance, F-U = Foliage Uniformity, V = Vigor, DI = Disease, DR = Drought.

F-A	F-U	V	DI	DR
4	4.5	3	4	4

Rating criteria: 1= excellent, 9 = poor

N. Area of adaptation and primary use of Selected Materials. LK517f saltgrass primary adaptation is to MLRA 17f; However, it is also adapted to MLRA's 16, 18 and all of MLRA 17. Establishment should be in the late spring using rhizomes or plugs planted on one-foot centers. Irrigation water should be applied the first summer to ensure stand establishment. LK517f saltgrass is used for riparian restoration and bank and shoreline stabilization.

O. Procedure for maintaining planting stock. The Lockford PMC will maintain breeders and foundation planting stock.

P. Additional restrictions. None.

Q. Reference specie sample sent with application forms.

R. Site description. The soil found at the collection site is a deep, poorly drained clay with a clay loam substratum. Slope is 0 to 1 percent. There is a perched water table at a depth of 3 to 6 feet. Annual rainfall is 7 to 10 inches.

S. Information to assist field inspectors. Average height 8.0 inches, average leaf width .120 inches, average leaf length 2.9 inches.

T. Literature review. There is a need for an adapted variety of saltgrass for use through out parts of central California for riparian restoration use and for bank and shoreline stabilization. Saltgrass does not grow straight, but sprawls and forms dense mats. It is a perennial California native grass and grows in or near marsh areas. It is a warm season grass, growing from April to November. Saltgrass can be used for forage. Also, it can tolerate both water logging and long periods of drought.

M. Availability of plant material. Rhizomes or plugs will be made available through the Foundation Seed Service, University of California, Davis.

References:

6. Annual Technical Report – Los Lunas Plant Materials Center, 1980.
7. Reduction of Levee Erosion in the Sacramento – San Joaquin Delta, Department of Environmental Horticulture, UC Davis.
8. The Jepson Manual of Higher Plants of California, Hickman, Ed., 1993.
9. Saline Agriculture, International Affairs National Research Council, 1990.
10. Grass, an Identification Guide, Lauren Brown, 1979.
- 11.

Time Spent on Activities for Lockeford PMC

State = CA

<u>Technology</u>		<u>Technology</u>		<u>Seed/Plant</u>	
Releases	5 %	Written:	10 %	Foundation:	20 %
Technology	15 %	Oral:	5 %	Field	10 %
		Other:	5 %	Funded Production:	0 %
Subtotal	20 %	Subtotal	20 %	Subtotal	30 %

Maintenance and
Facility or Land 30 %

Publications for Lockeford PMC

Hankins, D. 2002. Prescribed Fire Research. USDA-NRCS Lockeford Plant Materials Center, Lockeford. Nov.22.2002. 1p.

Erik Beardsley and David Dyer 2003. Status of field trials evaluation perennial grasses for rangeland soil carbon sequestration and bio-mass conversion to fuel potential. Lockeford PMC, Red Bluff, CA. July 1, 2003. 1p.

Dyer,D., T. Espinosa 2003. Lockeford PMC and PM Program Activity Report.

Dyer,D. 2003. Annual report for NPS seed production project. USDA-NRCS Lockeford Plant Materials Center, Lockeford, CA. Jan.03.2003. 1p.

Dyer, D., P. Laustsen 2002. Lockeford PMC Information brochure. USDA-NRCS Lockeford Plant Materials Center, Lockeford , CA. Dec.1.2002. 2p.

Dyer, D. 2002. Antelope Valley RCD plant production review. USDA-NRCS Lockeford Plant Materials Center, Lodi, CA. 1Dec.1.2002. 2p.

Dyer, D. 2002. Endangered Plant Species Production and Recovery Project. USDA-NRCS Lockeford Plant Materials Center, Lockeford, CA. Oct.3.2002. 2p.

Dyer, D. 2003. Lockeford PMC 2002 Annual Technical Report. USDA-NRCS Lockeford Plant Materials Center, Lockeford, CA. 2002. 80p.

Don Hankins 2003. Native American use of fire in river systems. Lodi New Sential, Lodi, CA. 5-15-03.

David Dyer and Erik Beardsley 2003. Technical Note 67, Review of Poster "Status of field trials evaluation perennial grasses for rangeland soil carbon sequestration and bio-mass conversion to fuel potential". Lockeford PMC, Lockeford, CA. 9-1-2003. 1p.

D.Dyer, E.Beardsley 2003. Develop value added opportunities for ranchers and farmers through the development of grass biomass as bioenergy product feedstocks, grant application. Lockeford PMC, Lockeford CA. 100p.

D.Dyer and T. Espinosa 2003. 2002 Activity Report. PMC, Lockeford, CA. April 2003. 7p.

D.Dyer 2003. Sequoia NPS trip report. Lockeford PMC, Lockeford. 5-20-03. 5p.

Campbell, R., T. Espinosa, D. Dyer 2002. Locals learn about art, environment at Lockeford PMC. Lodi

News Sentinel, Lodi, CA. Oct.10.2002. 2p.

Ann Francis and David Dyer 2003. Technical Note 68, Guidelines for Native Plant Use. Lockeford PMC, Lockeford, CA. 9-1-2003. 22p.

Presentations for Lockeford PMC

Fiscal Year 2003

Date 10/10/2002

Title: RCD and PMC Field Day tour

Presenter: D. Dyer and Tish

Location Lockeford PMC

Date 10/10/2002

Title: Watershed Stewardship Field day

Presenter: Espinosa, Extension,

Location PMC

Date 10/24/2002

Title: PMC overview and tour

Presenter: D.Dyer

Location Lockeford, CA

Date 11/1/2002

Title: NRCS programs used to fight weeds

Presenter: D.Dyer

Location Sacramento, CA

Date 11/26/2002

Title: Lockeford PMC management and use

Presenter: D.Dyer

Location Lancaster, CA

Date 12/4/2002

Title: PMC overview and Training

Presenter: D.Dyer

Location Lockeford, CA

Date 1/22/2003

Title: Use of the Plant Materials Program and PMC

Presenter: D.Dyer	Location PMC
Date <u>1/28/2003</u>	
Title: How to clean seed	
Presenter: J. Hutson, D. Dyer, T.	Location Lockeford PMC
Date <u>2/28/2003</u>	
Title: Native Plants Developed by Lockeford PMC	
Presenter: D.Dyer	Location Lockeford PMC
Date <u>4/23/2003</u>	
Title: Plant Materials and the Lockeford PMC	
Presenter: D.Dyer	Location Lockeford
Date <u>4/28/2003</u>	
Title: Use of Plant Materials for wildlife	
Presenter: D.Dyer	Location Lockeford
Date <u>5/14/2003</u>	
Title: PMC Open House - overview of PM	
Presenter: D.Dyer	Location Lockeford
Date <u>6/5/2003</u>	
Title: PMC and PM program for new staff	
Presenter: D.Dyer	Location Lockeford
Date <u>6/9/2003</u>	
Title: Ag in the Class room - PM uses	
Presenter: D.Dyer	Location Lockeford
Date <u>6/26/2003</u>	
Title: PM program for new staff	
Presenter: T. Espinosa	Location Lockeford
Date <u>7/28/2003</u>	

Title: Status of field trials evaluating perennial grasses for rangeland soil carbon sequestration and bio-mass conversion to fuel potential

Presenter: David Dyer and Erik

Location Spokane, Washington

Date 8/1/2003

Title: Area 3 training and Tour

Presenter: Tish Espinosa and Dave

Location Lockeford PMC

Date 8/21/2003

Title: Control of Arundo using CFT

Presenter: David Dyer

Location Somis, CA

Customers Assisted By Lockeford PMC

Fiscal Year 2003

Date	Customer Name	Affiliation	Cust. Type	Gend.	Race	Information Provided	How Prov.	Staf	Time (minutes)
10/1/20	Lisa	Grass Valley, CA	FO	Fema	White	CFT and FP studies for horse seed mixes.	phone	DAD	27
9/25/20	Bob Hewitt	Redlands Service Center, CA	FO	Male	White	Review Riverside Prop. For GSA review.	in person	DAD	1200
9/25/20	Chuck Cambra	Kamprath seed	CO	Male	White	seed coatings	phone	DAD	15
9/25/20	Ken Lair	BOR	CO	Male	White	Develop contract with BOR to grow seed and provide consultation	in person	DAD	800
9/22/20	Jennifer	Red Bluff Service Center, CA	FO	Fema	American Indian/	Berber seed production planting	e-mail	DAD	30
9/16/20	Ken Lair	BOR	CO	Male	White	Work on BOR contract to select species to work with.	in person	DAD	1200
9/16/20	Steve	CDFA	CO	Male	White	Invasive sp. Issues	phone	DAD	22

9/15/20	Athena Demetry	mail	USDI National	CO	Fema	White	seed production		
information		Park Service Sequoia and Kings	DAD 120						
9/9/200	Don Hankins	US Fish & Wildlife Service Endangered	CO	Male	American Indian/	Review of river area burn.	phone	DAD	20
9/9/200	Gene Kelley	Alturas Service Center, CA	FO	Male	White	Evaluate 140 plots and plant shrub plants	in person	DAD	1600
9/9/200	Scott Stewart	Conservaseed	CO	Male	White	Seed production	phone	DAD	11
9/8/200	Kelley	Cel Prill	GE	Male	White	Seed coating study development	phone	DAD	41
Date	Customer Name	Affiliation	Cust. Type	Gend.	Race	Information Provided	How Prov.	Time Staf	(minutes)
9/5/200	Athena Demetry	JH	USDI National	CO	Fema	White	seed production		
in person		Park Service Sequoia and Kings	2000						
8/25/20	Vernon Boyett	Stockton, CA	GE	Male	White	Conservation planning, range	in person	DAD	200
8/21/20	Steve Jewett	Somis Service Center, CA	FO	Male	White	Review of Arundo CFT	in person	DAD	600
8/5/200	Dawn Affman	Santa Maria Service Center, CA	FO	Fema	White	Seeding trails	phone	DAD	35
8/1/200	Robert Vlach	Yuba City Service Center, CA	FO	Male	White	Range seeding info.	phone	DAD	45
7/15/20	David	Stockton Service Center, CA	FO	Male	White	Coop agreement with RCD for air day and endangered species issues.	phone	DAD	35
6/11/20	Allen Bower	Susanville Service Center, CA	FO	Male	White	Use of TN-40	phone	DAD	18

6/11/20	Jhon Snider	Corvallis	GE	Male	White	Seed varitey testing, 541-573-3296	phone	DAD	45
6/11/20 30	Jim Jordall	ch2Mhill	GE	Male	White	Per. Grass use in waste water area,		phone	DAD
						515-270--2700 ext 26			
6/11/20	Jule Hananal	Escondido Service Center, CA	FO	Fema	White	Use of wetland plants	phone	DAD	15
6/11/20	Ken Weaver	Susanville Service Center, CA	FO	Male	White	Evaluation of white top weed plots	in person	DAD	600
6/11/20	Steve Griffith	USDA-ARS	CO	Male	White	Bio fuel progect collections	e-mail	DAD	9
6/10/20	Jacob	Stockton	GE	Male	Black	Greenhouse propagation training	in person	DAD	60
Date	Customer Name	Affiliation	Cust. Type	Gend.	Race	Information Provided	How Prov.	Staf	Time (minutes)
6/6/200	Russ Haas	PM Technical Advisor - National Park	OT	Male	White	Review of point reyes seed	e-mail	DAD	30
6/3/200	Dennis Morre	Yreka Service Center, CA	OT	Male	White	Evaluation of 140 plots at Tule lake	in person	DAD	1200
5/30/20	Deb Happe	SWCS	GE	Fema	White	Review of SWCS Web site	e-mail	DAD	60
5/29/20 60	Bill Burrows	Red Bluff	GE	Male	White	Chem. Use on perla seed production		e-mail	DAD
5/27/20	Phil Hogan	Woodland Service Center, CA	FO	Male	White	Source of turkey mullen seed	e-mail	DAD	20
5/15/20	Steve	Sacramento Service Center	CO	Male	White	CINWIC weed meeting	in person	DAD	250
5/13/20	Sheree Edwards		Cal Trans		CO	Fema	White	Intergrated veg.	
Management advis.	in person		DAD	480		Team			
5/8/200	Diane	California NRCS State Office	SO	Fema	White	Quality criteria - Plants	e-mail	DAD	100

5/7/200	Allen Forkey	California NRCS State Office	SO	Male	White	EPA Vegetated ditches support	e-mail	DAD	45
5/5/200 coring	Jhon Weaterford in person	DAD Center, CA	Woodland Service 520	FO	Male		White	Carbon CFT soil	
5/2/200	Erik Beardsley	NRCS Area Office, CA	OT	Male	Hispanic	Carbon CFT	e-mail	DAD	18
4/29/20	Erik Beardsley	NRCS Area Office, CA	OT	Male	Hispanic	Carbon CFT samples at Red Bluff	in person	DAD	1200
4/24/20 samples	Jhon Weaterford in person	DAD Center, CA	Woodland Service 1200	FO	Male		White	Carbon CFT	
Date	Customer Name	Affiliation	Cust. Type	Gend.	Race	Information Provided	How Prov.	Staf	Time (minutes)
4/23/20	Rick White	National Program Leader, PM, DC	OT	Male	White	National PM meeting at Lockeford	in person	DAD	480
4/21/20	John Gustisan	Petaluma Service Center, CA	FO	Male	White	Evaluation of varity trail	in person	DAD	480
4/19/20	Steve Griffith	USDA-ARS	CO	Male	White	Review of carbon CFT	phone	DAD	25
4/18/20 road re-seeding areas	Athena Demetry in person	USDI National DAD 1200 Park Service Sequoia and Kings		CO	Fema		White	Site review on	
4/17/20	Walt Graves	Escondido	GE	Male	White	Vetch study	e-mail	DAD	15
4/16/20	Bob Long	Auburn Service Center, CA	FO	Male	White	Jackson hunting club evaluation of vetch for weed control	in person	DAD	200
4/15/20	Amy Bastone	Concord Service Center, CA	FO	Fema	White	Growing marsh plants	phone	DAD	15
4/15/20	Chuck Cambra	Lockeford	CO	Male	White	Berber seed production	phone	DAD	30

4/14/20	Athena Demetry		USDI National	CO	Fema		White	Update on seed	
production	phone		DAD 18						
	Park Service								
	Sequoia and Kings								
4/14/20	Rona Peters	California NRCS	SO	Fema	White	Competitive sourcing - soils	in person	DAD	480
		State Office							
4/11/20	Rona Peters	California NRCS	SO	Fema	White	Soils Competetive sourcing team	in person	DAD	120
		State Office				leader			
4/4/200	Rona Peters	California NRCS	SO	Fema	White	Competive sourcing - soils	in person	DAD	480
		State Office							
4/3/200	Larry Hagenauer	Lancaster	GE	Male	White	Information on coyote willow use	e-mail	DAD	11
	Customer		Cust.				How		Time
Date	Name	Affiliation	Type	Gend.	Race	Information Provided	Prov.	Staf	(minutes)
4/2/200	Steve	California NRCS	CO	Male	White	State weed summit to develop plan	in person	DAD	480
		State Office							
3/19/20	Ann Francis	Alturas Service	FO	Fema	White	Review of introduced species and	e-mail	DAD	15
		Center, CA				their ability to compete with native			
						plants			
3/19/20	Athena Demetry		USDI National	CO	Fema		White	seed production	
of NPS species	in person		JH 2400						
	Park Service								
	Sequoia and Kings								
3/19/20	Martha	Ca Native Plant	GE	Fema	White	Tour and talk to CNPS staff	in person	DAD	100
		Soc.							
3/17/20	Chris Locke	Stockton Service	GE	Male	White	propagation review for lockeford	in person	DAD	11
		Center							
3/17/20	David Gilpin	Pacific Coast seed	GE	Male	White	Sierra buckwheat use and review	phone	DAD	20

3/13/201920	Rona Peters	California NRCS State Office	SO	Fema	White	Soil mapping competitive source team leadership	in person	DAD	
3/12/20	Chris Hoag	Aberdeen Plant Materials Center,	OT	Male	White	Mule fat propagation methods	e-mail	DAD	10
3/11/20	Howard Mueller	Escondido Service Center, CA	FO	Male	White	Water use by willows	e-mail	DAD	9
3/9/200	Chuck Cambra	Kamprath seed	GE	Male	White	Burber orchard grass seed stock	phone	DAD	15
3/9/200	Everett Butts	Wapumne Native Plant Nursery	GE	Male	White	Plant propagation info	phone	DAD	10
3/5/200	Don Hankins	UC DAVIS	CO	Male	American Indian/	Review of riparian study	in person	DAD	45
3/3/200	Steve Griffith	USDA-ARS	CO	Male	White	fuel production using plants	e-mail	DAD	15
2/18/20	Debra Denton	EPA and Cal EPA	CO	Fema	White	EPA-ARS Pesticide study at PMC	e-mail	DAD	13
Date	Customer Name	Affiliation	Cust. Type	Gend.	Race	Information Provided	How Prov.	Staf	Time (minutes)
2/18/20	John Tiedeman	Santa Maria Service Center, CA	FO	Male	White	Water jet tech note use for willow plantings	phone	DAD	15
2/5/200	Brook Murphy	Escondido Service Center, CA	FO	Fema	White	Road base materials	e-mail	DAD	10
2/5/200	Chuck Cambra	Kamprath seed co	GE	Male	White	farm bill use of plant materials	phone	DAD	30
2/5/200	Dave Simpson	Stockton Service Center, CA	FO	Male	White	endangered species project review	phone	DAD	20
2/5/20090	Dr. John	CelPril Manteca	GE	Male	White	review of seed enhancement research 209-823-1738 ext 223	in person	DAD	
2/5/200	Israel Iangoria	land owner	GE	Male	Hispanic	re-veg site with natives	phone	DAD	8
2/5/200	Jack Bramhall	Forest consult	GE	Male	White	Plant propagation workshop ideas	e-mail	DAD	15

2/5/200	Jane Lambardy	land owner	GE	Fema	White	plant material used on erosion control site	in person	DAD	30
2/5/200	Joe scianna	Bridger Plant	OT	Male	White	review of sudden oak death tech note		e-mail	DAD
2/5/200		Materials Center, MT Karl Striby Templeton Service Center, CA		FO	Male	White	review of seed mix and CA pea	phone	DAD 20
2/5/200	Kelly Rooney	Bayer	GE	Male	White	seed enhancements research 209-239-2606	in person	DAD	90
2/5/200	Larry Branham	Red Bluff Service Center, CA	FO	Male	White	Perla Seed use	phone	DAD	15
2/5/200	Mike McElhiney	Modesto Service Center, CA	FO	Male	White	Prisim proposal water qual review, use of buffers	phone	DAD	20
Date	Customer Name	Affiliation	Cust. Type	Gend.	Race	Information Provided	How Prov.	Staff	Time (minutes)
2/5/200	Peggy Rose	Ventura Co RCD	GE	Fema	White	weed management area comments	e-mail	DAD	6
2/5/200	Phil Hogan	Woodland Service Center, CA	FO	Male	White	Control of mustard in clover	e-mail	DAD	10
2/5/200	Rick Agagyo	Apple Valley Service Center, CA	FO	Male	Hispanic	review of pipeline seeding project	e-mail	DAD	20
2/5/200	Rick Aguayo	Apple Valley Service Center, CA	FO	Male	Hispanic	Review of seed pelletizing for Kern river project	phone	DAD	45
2/5/200	Roy Woodward	Endangered Sp. Consult	GE	Male	White	Review of endangered species recovery in lone area	in person	DAD	300
2/3/200	Chuck Cambra	Kamprath seed co	CO	Male	White	seed order review	phone	DAD	9
1/23/20	Michael Rahe	Riverside-Corona RCD	CO	Male	White	Review of plants used in restoration in Riverside area	phone	DAD	20
1/23/20	Steve Griffith	USDA-ARS	CO	Male	White	review of ethonal study	e-mail	DAD	15

1/22/20	Kristin Cooper-Carter	Red Bluff Service Center, CA	FO	Fema	White	Ideas on arundo re-veg project	e-mail	DAD	14
1/21/20 plants	Athena Demetry in person	DAD Park Service Sequoia and Kings	USDI National 960	CO	Fema		White	Planting of NPS	
1/21/20 Berber for weed	Barney Johanson	phone	Tempelton DAD 15	GE	Male		White	Chem. Use on control.	
1/21/20	Kristin Cooper-Carter	Red Bluff Service Center, CA	FO	Fema	White	Plant rec. for stream reveg.	e-mail	DAD	15
1/21/20	Tish Espinosa	California NRCS State Office	SO	Fema	Hispanic	Review of Hort note 5 salt affected soils for CA use.	e-mail	DAD	10
Date	Customer Name	Affiliation	Cust. Type	Gend.	Race	Information Provided	How Prov.	Staf	Time (minutes)
1/17/20	Steve	CDFA ARS	CO	Male	White	Review of ARS invasive species control projects	in person	DAD	480
1/13/20	Ann Francis	Alturas Service Center, CA	FO	Fema	White	Veg guide plant info., seeding rates	e-mail	DAD	10
1/13/20	Ann Francis	Alturas Service Center, CA	FO	Fema	White	veg. Guide listing info.	phone	DAD	45
1/13/20 report	Athena Demetry e-mail	DAD Park Service Sequoia and Kings	USDI National 10	CO	Fema		White	NPS annual	
1/13/20	Glenn Sakamoto	Hoolehua Plant Materials Center, HI	OT	Male	Asian/ Pacific	IECA meeting info.	phone	DAD	15
1/13/20	Jim Jordall	CH2m Hill	GE	Male	White	cropping system seeding dates for Barstow area. 515-270-2700 ext	phone	DAD	15

1/13/20	Karl Striby	Templeton Service Center, CA	FO	Male	White	Fert. Rates for range and pasture seedings, inculant rates, range varitey trail.	phone	DAD	50
1/13/20	Peggy Rose	Somis Service Center, CA	FO	Fema	White	Arundo CFT stat.	e-mail	DAD	10
1/13/20	Rita Bickel	NRCS Area Office, CA	OT	Fema	White	Report on use of pampas grass	e-mail	DAD	10
1/13/20	Russ Haas	PM Technical Advisor - National Park	OT	Male	White	NPS progress report	e-mail	DAD	60
1/13/20	Sara Workman	Univ. of FL, Agroforestry	GE	Fema	White	SWCS web site info	e-mail	DAD	15
1/13/20	Steve	CDFA	CO	Male	White	invasive sp info	e-mail	DAD	13
Date	Customer Name	Affiliation	Cust. Type	Gend.	Race	Information Provided	How Prov.	Staf	Time (minutes)
1/8/200	Martha	Ca Native Plant Soc.	GE	Fema	White	CA Native plant soc. Review of PM activities	phone	DAD	20
1/8/200	Phil Hogan	Woodland Service Center, CA	FO	Male	White	Review and evaluation of Pacific Coast producers planting for tomato waste control	in person	DAD	360
1/7/200	Rob Wilson	Coop ext. service	CO	Male	White	Review of study info.	phone	DAD	17
1/5/200	Ann Francis	Alturas Service Center, CA	FO	Fema	White	veg guide plant uses	phone	DAD	45
1/5/200	Janet Balloy	Antelope Valley RCD	CO	Fema	White	removal of pampas grass from recommendation list	e-mail	DAD	15
1/3/200	Barney Johansing	Templeton Service Center	CO	Male	White	range planting planing, seeding rates and dates	phone	DAD	16
12/18/2	Dennis Moore	NRCS Area Office, CA	OT	Male	White	Veg. Guide review	in person	DAD	200

12/11/2	Allison Bettencourt	Grass Valley, CA	FO	Fema	White	PM training to FO and RCD staff, CFT's, field plants, restoration using native plants.	in person	DAD	480
12/11/2 project	Athena Demetry in person	DAD Park Service Sequoia and Kings	USDI National 4800		CO	Fema	White	seed production	
12/11/2 project	Athena Demetry in person	JH Park Service Sequoia and Kings	USDI National 4200		CO	Fema	White	seed production	
12/11/2 project	Athena Demetry in person	CA Park Service Sequoia and Kings	USDI National 4200		CO	Fema	White	seed production	
Date	Customer Name	Affiliation	Cust. Type	Gend.	Race	Information Provided	How Prov.	Staff	Time (minutes)
12/11/2	Erik Beardsley	NRCS Area Office, CA	OT	Male	Hispanic	Review of Carbon CFT data	phone	DAD	60
12/10/2	Ann Francis	Alturas Service Center, CA	FO	Fema	White	veg. Guide and native plant recommendations	phone	DAD	120
12/8/20	Martha	Ca Native Plant Soc.	GE	Fema	White	Native plants used at PMC	phone	DAD	13
12/5/20	Jake Sigg	CA native plant	GE	Male	White	Native plant info	phone	DAD	10
12/5/20	Jason Jackson	Escondido Service Center, CA	FO	Male	White	All emp. Meeting program comm. Assistance.	e-mail	DAD	180
12/5/20	Phil Hogan	Woodland Service Center, CA	FO	Male	White	Review of arundo and tamarisk management practices.	e-mail	DAD	20
12/2/20	Doug Petters	Hanson trust UC	CO	Male	White	Provide Sulla seed and recommendations	mail	JH	60

12/2/20	Ken Oster	NRCS Area Office, CA	OT	Male	White	Review of corps and soils for Livermore ag. Enhancement area.	e-mail	DAD	45
12/2/20	Paul Laustsen	NRCS Area Office, CA	OT	Male	White	grass sod recommendations for LA area.	e-mail	DAD	10
12/2/20	Richard King	NRCS Area Office, CA	OT	Male	White	Mycorrhiza use in range seedings	phone	DAD	45
11/26/2	Richard Campbell	Lancaster Service Center, CA	FO	Male	Black	Review of Antelope Valley RCD plant production facility and determine improvements.	in person	DAD	900
11/12/2	Steve	CDFA	CO	Male	White	Review of weed mapping handbook	mail	DAD	45
11/8/20	Phil Hogan	Woodland Service Center, CA	FO	Male	White	Review of tamarisk introduction dates.	e-mail	DAD	15
Date	Customer Name	Affiliation	Cust. Type	Gend.	Race	Information Provided	How Prov.	Staf	Time (minutes)
11/8/20	Sierra Hayden	Escondido Service Center, CA	FO	Fema	White	PM training, tech note info	e-mail	DAD	20
11/5/20	Bob Long	Placerville Service Center, CA	FO	Male	White	Planting reviews	in person	DAD	180
11/5/20	Lauren Hastings	CALFED	CO	Fema	White	Detail review of 6 mill. Nature conservency Cal fed proposal.	e-mail	DAD	400
11/3/20	Vic Smothers	Escondido Service Center, CA	FO	Male	White	Review of rye grass seeding rates	e-mail	DAD	30
11/1/20	Steve	CDFA	CO	Male	White	CINWIC meeting for weed control issues.	in person	DAD	480
10/18/2	Don Hankins	UC DAVIS	CO	Male	American Indian/	Review of riparian improvement reseach at PMC	in person	DAD	60
10/12/2	Chuck Cambra	Kamprath seed co.	CO	Male	White	seed production info	phone	DAD	20
10/12/2	Steve Griffith	USDA-ARS	CO	Male	White	Review ethonol study	phone	DAD	15

10/12/2014	Tom Jones	USDA-ARS Utah State Univ.	CO	Male	White	Seed germination study info and seed	phone	DAD
10/8/20	Phil Blake	Napa Service Center, CA	FO	Male	White	Evaluated willow plantings along the Napa river for salt tolerance.	in person	DAD 480

PMC Seed Production of NRCS Releases by CAPMC

Fiscal Year 2003

State = CA

Release/Symb	Foundation			Certified Seed			Common Seed			Total
	lbs.	\$/lbs.	Value	lbs.	\$/lbs.	Value	lbs.	\$/lbs.	Value	
Akaroa / DAGL	0	\$0.00	\$0	0	\$0.00	\$0	0	\$6.00	\$0	\$0
Berber / DAGL	302	\$10.00	\$3,020	0	\$0.00	\$0	0	\$8.00	\$0	\$3,020
Blando / BRHOH	0	\$0.00	\$0	0	\$0.00	\$0	0	\$2.00	\$0	\$0
Cucamonga / BRCA5	35	\$10.00	\$350	0	\$0.00	\$0	0	\$6.00	\$0	\$350
Cuesta / CEFL4	0	\$0.00	\$0	0	\$0.00	\$0	0	\$0.00	\$0	\$0
Dorado / CLIS	10	\$10.00	\$100	0	\$0.00	\$0	0	\$0.00	\$0	\$100
Lana / VIVIV8	0	\$0.00	\$0	0	\$0.00	\$0	0	\$1.20	\$0	\$0
Lassen / PUTR2	0	\$0.00	\$0	0	\$0.00	\$0	0	\$0.00	\$0	\$0
LK115d Germplasm / NAPU4	1	\$60.00	\$60	0	\$0.00	\$0	0	\$50.00	\$0	\$60
LK215e Germplasm / NAPU4	1	\$60.00	\$60	0	\$0.00	\$0	0	\$50.00	\$0	\$60
LK315d Germplasm / NAPU4	1	\$60.00	\$60	0	\$0.00	\$0	0	\$50.00	\$0	\$60
LK415f Germplasm / NACE	1	\$60.00	\$60	0	\$0.00	\$0	0	\$50.00	\$0	\$60
Maleza / CECO	0	\$0.00	\$0	0	\$0.00	\$0	0	\$6.00	\$0	\$0
Marana / ATCA2	0	\$0.00	\$0	0	\$0.00	\$0	0	\$0.00	\$0	\$0

Mariposa / ELGL	34	\$40.00	\$1,360	0	\$0.00	\$0	0	\$15.00	\$0	\$1,360
MonteFrio / TRHI4	0	\$0.00	\$0	0	\$0.00	\$0	0	\$4.00	\$0	\$0
Panoche / BRRU2	0	\$0.00	\$0	0	\$0.00	\$0	0	\$0.00	\$0	\$0
	Foundation			Certified Seed			Common Seed			
Release/Symb	lbs.	\$/lbs.	Value	lbs.	\$/lbs.	Value	lbs.	\$/lbs.	Value	Total
Perla / PHAQ	38	\$10.00	\$380	0	\$0.00	\$0	0	\$7.00	\$0	\$380
Rio / LETR5	0	\$0.00	\$0	0	\$0.00	\$0	0	\$40.00	\$0	\$0
Sierra / ERUMP	10	\$50.00	\$500	0	\$40.00	\$0	0	\$0.00	\$0	\$500
Wilton / TRHI4	0	\$0.00	\$0	0	\$0.00	\$0	0	\$4.00	\$0	\$0
Wimmera 62 / LORI	0	\$0.00	\$0	0	\$0.00	\$0	0	\$1.00	\$0	\$0
Zorro / VUMY	40	\$9.00	\$360	0	\$0.00	\$0	0	\$7.00	\$0	\$360
Total Value for	473		\$6,310	0		\$0	0		\$0	\$6,310
Grand Totals:	473		\$6,310	0		\$0	0		\$0	\$6,310

PMC Vegetative Production of NRCS Releases

Fiscal Year 2003

Release / Symbol	Type	Clas	Amoun	Value	Total
Dorado / CLIS	Container	Foundation/G1	1,500	\$6.00	\$9,000
Dorado / CLIS	Liners	Foundation/G1	960	\$3.00	\$2,880
	Total for Release:		2,460		\$11,880
Marana / ATCA2	Container	Foundation/G1	2,500	\$4.00	\$10,000
	Total for Release:		2,500		\$10,000
Rio / LETR5	Liners	Foundation/G1	35,000	\$0.50	\$17,500
Rio / LETR5	Liners	Foundation/G1	3,000	\$0.50	\$1,500
	Total for Release:		38,000		\$19,000
Sierra / ERUMP	Liners	Foundation/G1	5,000	\$3.00	\$15,000
Sierra / ERUMP	Liners	Foundation/G1	1,960	\$3.00	\$5,880

Total for Release:	6,960	\$20,880
Total for State (all releases):	49,920	\$61,760
Grand Total (all states, all releases):	49,920	\$61,760

Other Production for CAPMC

Vegetative Production:

Stock Type	Amount	Purpose	Comment
Liners	19000	field planting	
Liners	55000	field planting	
Liners	15000	reimbursable	NPS
Liners	5000	field planting	

Commercial Seed Production of NRCS Lockeford PMC Releases

Fiscal Year 2003

Release/Symb	Foundation			Certified Seed			Common Seed			Total
	lbs.	\$/lbs.	Value	lbs.	\$/lbs.	Value	lbs.	\$/lbs.	Value	
Akaroa / DAGL	0	\$0.00	\$0	0	\$0.00	\$0	5000	\$6.00	\$30,000	\$30,000
Berber / DAGL	0	\$10.00	\$0	0	\$0.00	\$0	10000	\$8.00	\$80,000	\$80,000
Blando / BRHOH	0	\$0.00	\$0	0	\$0.00	\$0	120000	\$2.00	\$240,000	\$240,000
Cucamonga / BRCA5	0	\$10.00	\$0	0	\$0.00	\$0	80000	\$6.00	\$480,000	\$480,000
Cuesta / CEFL4	0	\$0.00	\$0	0	\$0.00	\$0	0	\$0.00	\$0	\$0
Dorado / CLIS	0	\$10.00	\$0	0	\$0.00	\$0	0	\$0.00	\$0	\$0
Lana / VIVIV8	0	\$0.00	\$0	0	\$0.00	\$0	140000	\$1.20	\$168,000	\$168,000
Lassen / PUTR2	0	\$0.00	\$0	0	\$0.00	\$0	0	\$0.00	\$0	\$0
LK115d Germplasm /	0	\$60.00	\$0	0	\$0.00	\$0	200	\$50.00	\$10,000	\$10,000

NAPU4										
LK215e Germplasm / NAPU4	0	\$60.00	\$0	0	\$0.00	\$0	300	\$50.00	\$15,000	\$15,000
LK315d Germplasm / NAPU4	0	\$60.00	\$0	0	\$0.00	\$0	100	\$50.00	\$5,000	\$5,000
LK415f Germplasm / NACE	0	\$60.00	\$0	0	\$0.00	\$0	200	\$50.00	\$10,000	\$10,000
Maleza / CECO	0	\$0.00	\$0	0	\$0.00	\$0	1000	\$6.00	\$6,000	\$6,000
Marana / ATCA2	0	\$0.00	\$0	0	\$0.00	\$0	0	\$0.00	\$0	\$0
Mariposa / ELGL	0	\$40.00	\$0	0	\$0.00	\$0	4000	\$15.00	\$60,000	\$60,000
MonteFrio / TRH14	0	\$0.00	\$0	0	\$0.00	\$0	5000	\$4.00	\$20,000	\$20,000
Panoche / BRRU2	0	\$0.00	\$0	0	\$0.00	\$0	0	\$0.00	\$0	\$0
	Foundation			Certified Seed			Common Seed			
Release/Symb	lbs.	\$/lbs.	Value	lbs.	\$/lbs.	Value	lbs.	\$/lbs.	Value	Total
Perla / PHAQ	0	\$10.00	\$0	0	\$0.00	\$0	12000	\$7.00	\$84,000	\$84,000
Rio / LETR5	0	\$0.00	\$0	0	\$0.00	\$0	3000	\$40.00	\$120,000	\$120,000
Sierra / ERUMP	0	\$50.00	\$0	100	\$40.00	\$4,000	0	\$0.00	\$0	\$4,000
Wilton / TRH14	0	\$0.00	\$0	0	\$0.00	\$0	5000	\$4.00	\$20,000	\$20,000
Wimmera 62 / LORI	0	\$0.00	\$0	0	\$0.00	\$0	10000	\$1.00	\$10,000	\$10,000
Zorro / VUMY	0	\$9.00	\$0	0	\$0.00	\$0	50000	\$7.00	\$350,000	\$350,000
Total Value for	0		\$0	100		\$4,000	445800		\$1,708,000	\$1,712,000
Grand Totals:		0	\$0	100		\$4,000	445,800		\$1,708,000	\$1,712,000